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Master's Minor Dissertation

Leadership strategies employed in the public sector for promoting urban climate transition: the case of Cape Town, South Africa.

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DECLARATION

I, Gonzalo Hess, confirm that the work presented in this dissertation is my own. Where information has been derived from other sources, I confirm that this has been indicated in the dissertation.

Signed by candidate

Gonzalo Hess

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ABSTRACT

Despite the success of the Paris Agreement on achieving a global compact between nations to act on climate change, cities have emerged as interesting locations for studying climate leadership due to the failure at the national scale to translate adequate climate actions to meet the goals set. Cities have served as important agents in governance interventions, experiments, and networks, leading the way in resilient, low-carbon, and sustainable urban development, and driving innovative climate governance that spurs climate action. Understanding how to effectively lead the urban climate transition poses a significant challenge due to the involvement of diverse public and private actors who need to engage in collaborative climate action. Additionally, there is a lack of practical knowledge regarding how city actors implement climate leadership, highlighting a research gap in this area. This study examines the leadership strategies and mechanisms present in Cape Town, a city in South Africa with a strong track-record in climate action planning, focusing on co-creational leadership. It contributes to knowledge of urban public leadership by analysing the strategies employed by governing actors to facilitate the transition toward climate-resilient and low-carbon development in Cape Town, South Africa. This qualitative study employed an abductive logic and a single case study approach focused on the City of Cape Town. Semi-structured interviews with key stakeholders were used to explore their challenges, dilemmas, and coping strategies in promoting the urban climate transition. Thematic analysis using NVivo software was employed for data analysis to identify co-creational leadership strategies through iterative coding. Findings indicate that actors involved in pursuing Cape Town's climate goals, whether working in local government entities, private businesses, or international networks, must address specific challenges related to political will, legislation, budgeting, and communication matters to effectively implement the climate action plan and facilitate a successful transition. The dissertation concludes that Cape Town's urban climate transition context reveals collaborative leadership strategies, diverse actor involvement, and institutional constraints. Context-specific leadership and adaptability are pivotal for sustainable urban development. Cape Town's experiences offer crucial lessons for global cities facing climate challenges, emphasizing the significance of tailored approaches. These insights serve as a guide for cities worldwide in driving transformative change towards sustainability within their unique contexts.

Keywords: Urban Climate Governance, Co-creational leadership, Urban Climate Transition, Climate Innovations, Thematic Analysis

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ABBREVIATIONS

ANC	African National Congress
CAP	Climate Action Plan
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CBD	Central Business District
CDP	Carbon Disclosure Project
CFO	Chief Financial Officer
CSIR	Council for Scientific and Industrial Research
DA	Democratic Alliance
DFI	Development Funding Agency
EDP	(Western Cape) Economic Development Partnership
GCoM	Global Covenant of Mayors for Climate and Energy
GHG	Greenhouse Gases
ICLEI	International Council for Local Environmental Initiatives
MW	Megawatt
NCL	New Civic Leadership
NGO	Non-governmental Organization
NPC	Non-profit Company
NPM	New Public Management
SALGA	South African Local Government Association
SAPOA	South African Property Owners Association
SAPVIA	South African Photovoltaic Industry Association
SAWEA	South African Wind Energy Association
SEA	Sustainable Energy Africa
SEM	Sustainable Energy Markets (Department)
SSEG	Small-Scale Embedded Generation
SU	Stellenbosch University
UCT	University of Cape Town
UWC	University of the Western Cape

1 INTRODUCTION

"Nations talk, cities act." – *C40 Cities (2009, cited in Acuto and Rayner, 2016, p.1147)*

1.1 Background

Cities are emerging as frontrunners, both globally and nationally, in driving resilient, low-carbon, and sustainable urban development. The latter is regarded in this research as the *Urban Climate Transition*. The Paris Agreement's inability to become a significant deal among nations to tackle the climate crisis, enhanced the role of cities as key actors and arenas in dealing with the fast-changing climate. Additionally, cities are pivotal hubs for both causing and facing the impacts of climate change. They play a crucial role in the reduction of greenhouse gas emissions (GHG), safeguarding people and infrastructure, and implementing effective strategies to adapt and address climate change (Anguelovski and Carmin, 2011; van der Heijden, 2019). At a larger scale, numerous cities worldwide strengthen urban climate governance approaches on national and international levels by forming networks like C40 Cities and Local Governments for Sustainability - ICLEI. The absence of proactive measures from nation states and the active participation of cities substantiated the idea conveyed by C40 during COP 15 in Copenhagen in 2009: while *"nations talk, cities act"* (Acuto and Rayner, 2016, p.1147).

In the pursuit of climate action and pathways towards climate transformation, cities from both developed and developing regions are expected to employ strategies and collaborative efforts to access resources in public and private sectors through innovative forms of urban governance and partnerships. The city of Cape Town in South Africa serves as the main research subject. This choice is based on its acknowledged progressive position in addressing climate change, extensive adaptation efforts, and active involvement in global networks (Taylor, 2016; Araos et al, 2016). These attributes facilitate a comprehensive understanding of the phenomena.

Effective climate planning and action rely significantly on governance, understood to be the ways in which actors exercise influence over the course of events (Anguelovski and Carmin, 2011). In this sense, public leaders operating in urban settings perform climate leadership by assembling and aligning internal public entities within local governments or mobilizing various actors across the public and private sectors for collective goal setting, planning, development of new institutions or otherwise promoting experiments, innovations, and their upscaling (Anguelovski and Carmin, 2011; Gordon and Johnson, 2017). In this context, the research employs an iterative thematic analysis process to identify patterns in the experiences of key sector respondents, drawn from a set of semi-structured interviews. The themes were guided by and offer new insights into the co-creational leadership ideal type of the urban climate governance theoretical framework set out by Hofstad *et al* (2022). The themes help to identify the strategies and mechanisms employed to overcome constraints that hinder the work towards urban climate transformation.

1.2 Problem Statement

Despite the observed increase in attention given to deepening our understanding of the role of cities in addressing climate change, it remains a major challenge both theoretically and practically to

understand the complexities of climate change governance within urban settings. This gap is primarily due to the limited knowledge in existing climate governance scholarship and the need for cities to collaborate with relevant stakeholders to perform a leadership role towards climate action (Van der Heijden, 2019). This issue is also highlighted by a high-ranking official from the City of Oslo, who asserts that “*knowing how to lead the green shift is the most challenging part of climate transformation*” (Hofstad et al, 2022, p. 1). Furthermore, collaborative governance theory falls short in highlighting the nuances of urban climate leadership in response to the evolving climate crisis (Hofstad and Vedeld, 2021).

To address these identified gaps, it is imperative to deepen the understanding of urban climate governance, as it provides key insights into a set of factors and relationships crucial for effectively reducing costly and damaging climate-related risks and building climate resilience. Therefore, this study seeks to contribute to the growing body of literature on urban climate governance and expand the discourse beyond the confines of studies primarily focused on the Global North.

1.3 Research Aim

The aim of this research is to contribute to the current body of both academic and practical knowledge available on public leadership to address climate change at the urban scale. This study seeks to characterize the leadership strategies employed by governance actors promoting a transition to climate-resilient and low-carbon development, focusing on Cape Town, South Africa.

1.4 Research Questions

In relation to both the problem statement and research aim, the main research question is:

Which are Cape Town’s key actors, leadership strategies and institutional factors shaping the urban climate transition?

To answer the main question, five sub-questions were formulated that will be answered throughout the research analysis. These questions are:

1. Who are the actors involved in the urban climate transition in the City of Cape Town?
2. What are leadership-related institutional constraints for achieving Cape Town’s climate goals?
3. Which leadership strategies are being employed in the City of Cape Town for achieving the urban climate transition?
4. Does the evidence from Cape Town support the urban climate governance leadership typology provided by Hofstad and Vedeld (2021) and Hofstad *et al* (2022) or suggest the need for modifications?

1.5 Dissertation Outline

This master’s dissertation is divided into several chapters that present the different research steps necessary to answer the stated research question. Next, in chapter 2, a review of the latest available academic literature related to urban climate governance and leadership theories is presented.

Chapter 3 presents an in-depth description of the study methodology, ranging from philosophical aspects to research methods. In chapter 4, a brief context of the city of Cape Town is given, which is the primary empirical site of this study. Chapter 5 presents the findings derived from applying the methods described in the methodology. Following this, the interconnections between the empirical findings and theoretical aspects from the literature review, are presented as the discussion of the research in chapter 6. The conclusions and further research recommendations are provided in the final chapter 7.

2 LITERATURE REVIEW

2.1 Urban Climate Governance

The concept of urban climate governance is defined in broad terms as *'the ways in which public, private and civil society actors and institutions articulate climate goals, exercise influence and authority, and manage climate planning and implementation processes'* (Anguelovski and Carmin, 2011, p. 169). Hofstad and Vedeld (2021), when examining the primary literature on urban climate governance, found three distinct topics of interest emerged: *urban experiments as a tool for climate governance; city networks as platforms for learning and innovation; and cities as leaders and/or pioneers at global and regional levels*. The initial part of this chapter is structured around these themes. However, prior to delving into them, the *significance of cities within the climate context* is briefly introduced.

2.1.1 Significance of cities within the climate context

Cities are pivotal in the global climate context, both contributing to and working to combat environmental challenges (Acuto and Leffel, 2021). Seen as significant contributors to climate change, they are the places that will be hit hardest by its effects (van der Heijden, 2019). In this sense, cities are key in reducing greenhouse gas emissions and safeguarding against climate impacts (Anguelovski and Carmin, 2011; van der Heijden, 2019). They are innovation hubs, implementing adaptive measures, testing policies, and fostering internal integration (Anguelovski and Carmin, 2011; Hofstad and Vedeld, 2021). Cities strengthen their capacity and progress on climate action by setting up specialized climate units strategically positioned within relevant departments or as separate offices near the mayor's office (Anguelovski and Carmin, 2011; Hofstad et al, 2022). These units coordinate and implement climate initiatives, key in the incorporation of efforts. Cities also stand out through networks, taking global leadership against climate change. Collaborating across national and global scales, they commit to emission reduction targets, foster partnerships with non-state actors, and play an active role in the global political landscape (Gordon, 2018).

2.1.2 Urban experiments as a tool for climate governance innovation

Urban climate experimentation has served as a means for testing interventions and reducing risks associated with pioneering and flexibility in solutions to reduce climate risks. The underlying concept is that experimentation enables collaborative learning among various actors, addressing the uncertainties of both climate change and radical innovation. Although local governments have assumed a leading role in urban climate governance, a multitude of participants spanning local communities, regional and national governments, enterprises, and research institutions play a part in advancing climate initiatives. These stakeholders engage in knowledge creation and integration, on the trial of various social, economic, and technological advancements, and independently organize service provisions (Bulkeley and Castán Broto, 2013; Hölscher et al, 2018).

Experimentation universally involves novel interventions departing from the status quo, in the recognition of trying something new (Bernstein and Hofmann, 2018). In this line, it is widely

acknowledged that governance experiments challenge the conventional notions of global climate governance, extending from national legislation and international treaties, to the reshaping of urban space, and changes in consumption and mobility patterns. Even though these experiments are not inherently disruptive, as they can serve to maintain the existing situation, they act as initiatives to question prevailing ideologies, behaviours, practices, or interactions (Gordon, 2018). These governance experiments transcend mere advocacy and lobbying, representing deliberate initiatives to guide the interests and actions of a specific set of actors toward a distinct trajectory (Gordon and Johnson, 2017). Outcomes of experiments embrace innovations and decarbonization/climate transformation routes, alongside possible insights for altering urban governance, policies, and institutions (Hofstad et al, 2022). Acuto and Rayner (2016) add that experimentation establishes novel political arenas within urban landscapes, as boundaries between public and private authority blurs. This process predominantly takes shape through technical interventions within infrastructure networks.

Several studies on the subject have been conducted that identify, catalogue, and evaluate these kinds of interventions, highlighting unique approaches through which various stakeholders (city governments, community groups, corporate entities, financial institutions) collaborate to implement decarbonization measures (Gordon, 2018; Bulkeley and Castán Broto, 2013). One of these studies, carried out by Bulkeley and Castan Broto (2013), seeks to comprehend the nature and dynamics of urban climate change experiments through an analysis of over 600 initiatives across 100 cities worldwide. Their findings suggest that the proliferation of experiments, especially in the industrializing Global South, could imply that evolving norms and opportunities in global climate governance are fostering experimentation in these areas. In Asia, North America, and Africa, climate change experiments are predominantly focused on urban infrastructure (focus on energy-related and waster sector projects), while Europe and Oceania prioritize the built environment sector. These distinctions mirror variations in urban political economies. Led primarily by the public sector actors, evidence suggested that urban climate experiments were governed by municipalities, municipally-controlled utility companies, and urban planning and transport agencies (some of them NGOs), therefore, this type of experimentation involves a plethora of private and civil society actors. Even though, the authors also identified the limited role of academic or scientific organizations (Bulkeley and Castán Broto, 2013).

A framework developed by Bernstein and Hoffmann (2018) aims to investigate mechanisms capable of disrupting carbon lock-in by engaging with varied, decentralized responses. The identified political mechanisms: *normalization*, *capacity building*, and *coalition building*, contribute to determine the potential of the experiment-driven changes to scale up and establish themselves in the intended system, simultaneously facilitating the expansion of decarbonization initiatives across jurisdictions, markets, and practices. The first mechanism: *Normalization*, involves altering perceptions of acceptable conduct within public policies and interests, potentially influencing behaviours. This impact, however, can be influenced by local politics and institutional contexts. *Capacity building*, the second political mechanism, involves modifying material, institutional, and cognitive capabilities to facilitate action in decarbonization. Interventions can directly enhance capacity through methods such as providing funding, education, training, technical assistance, and fostering co-governance via collaborations between public and private entities and authorities. In this line, it leads to the development of institutional capacity by reshaping government decision-making processes and

program implementation. Lastly, *coalition building* strives to catalyse actor networks and coalitions by identifying and connecting "winners" in the decarbonization process while mitigating the impact on those adversely affected. This entails empowering climate-focused stakeholders, fostering support through incentives, altering approaches, or proactive social movements, and harnessing broader market influences (Bernstein and Hoffmann, 2018).

The significance of local governments as dominant public actors driving urban climate change experiments, underscores a growing inclination to view them as policy laboratories and experimental hubs for climate innovations. These innovations primarily target social niches that diverge from the mainstream, encompassing grassroots initiatives driven by citizen groups and NGOs, engaging in bottom-up experiments with environmental technologies. These initiatives operate beyond conventional institutional frameworks of corporations and governments, constituting what is often referred to as grassroots or grassroots-level innovations (Bulkeley and Castán Broto, 2013). This interest in experimental cities as platforms for urban sustainability governance signified both the emergence and proliferation of varied experimental forms. Bulkeley *et al* (2019) discusses Urban Living Labs (ULLs) as a form of governance, possessing common traits like urban embedding, learning focus, user participation, distinct leadership, and continuous improvement. ULLs can also be referred to as 'urban labs' or 'living labs', but due to the novelty of the terminology, sometimes it's not explicitly specified. ULLs play a crucial role in innovative collaborations between local governments and nearby higher education institutions, aiming to generate swiftly applicable knowledge aligned with societal requirements (Perry *et al*, 2018; Patel *et al*, 2020).

Lastly, the discussed trend towards experimentation is driving a learning focus in urban climate governance, seen through the lens of system innovation, which underscores hands-on experiential learning. Wolfram *et al* (2019) perceives governance learning as a social process involving stakeholders responding to societal issues like urban climate change. This social learning process modifies governance methods in terms of polity, politics, and policy. Both stakeholder participation and co-design are essential features, as it democratically legitimates the learning process. Differences in carbon-intensive economies shapes urban climate governance learning, with geopolitical challenges influencing meta-learning's effectiveness. Similar challenges are essential for meaningful cross-city meta-learning, highlighting the role of local context in shaping governance innovations.

2.1.3 City networks as platforms for learning and innovation

In recent years, city networks have evolved from simple municipal collaborations to more intricate networked governance arrangements (Davidson *et al*, 2019). According to Acuto and Leffel (2021), the emergence of formalized organizations, primarily comprised of local governments, has opened a new frontier for urban governance. Referred to as 'city networks', these partnerships among cities are becoming increasingly tangible as they mobilize to institutionalize collaborative initiatives. International networks and professional associations have also played an important role in raising awareness and promoting action by sharing technical knowledge, resources, and process-oriented information (Anguelovski and Carmin, 2011). Gordon (2018) adds that city networks have served to strengthen and enhance the capacity of cities to translate rhetorical commitments into concrete actions. The past two decades have witnessed the establishment of at least nine urban climate networks across the globe (Davidson *et al*, 2019), with the most prominent being the Local

Governments for Sustainability (ICLEI) and C40 Cities Climate Leadership Group. The main focus of these networks is governance (50%), followed by environment (29%), and energy (9.5%), according to the study conducted by Acuto and Leffel (2021), which aimed to analyse a database of nearly 200 networks.

Given the increasing visibility both in the public and research, city networks are emerging as key players in tackling global environmental challenges, which are often regarded as institutions. This implies that networks are evolving into actors and needs to be recognized as tangible components of both global and local urban governance (Acuto and Leffel, 2021). This emergence of networked city climate governance reflects the failure of national and state governments to acknowledge the imperative of a global response to anthropogenic global warming. In this context, city networks are challenging the status, methods, and institutional relevance of traditional planning throughout their actions. These actions of *networked urbanism* might indicate a significant shift in the focus of urban policy, including planning, from rigid land use regulation, towards a more dynamic and project related initiatives (Davidson et al, 2016).

Davidson *et al* (2016) also attempted to review and synthesize insights from academic literature on the C40 network, which has played a significant role in the development of common planning strategies, shared metropolitan policies, and fostering connections between megacities and international institutions. The primary objective of the C40 network is to deliver an evidence-based, action-oriented, and internationally networked model of urban governance, promoting the exchange of technical knowledge and climate policy insights. Within the C40 network, member cities engage in collective, distributed, and simultaneously parallel experimentation to generate a portfolio of suitable 'best practices'. The network facilitates collaboration, learning, and dissemination of innovations among cities, both directly at conferences, summits, workshops, and events, and indirectly through publications on the C40 website. Additionally, C40 provides technical assistance, such as the 'Deadline2020' program, supporting cities in progressing their climate action plans towards the Paris Agreement's 1.5°C target. However, C40 faces the challenge of scaling actions for more impactful outcomes and has made efforts to engage cities in the Global South, including China, Latin America, and Africa.

2.1.4 Cities as leaders and/or pioneers at global and regional levels

Since early 1990s, cities have been at the forefront of climate experimentation by conducting local initiatives and increasingly participating in a growing system of transnational climate governance (Bulkeley and Castán Broto, 2013). City networks such as the International Council for Local Environmental Initiatives (ICLEI) and the Climate Alliance, emerged with a primary objective of raising awareness about climate change within local governments. These networks played a crucial role in fostering local policy champions by offering technical assistance, normative endorsement, and varying degrees of material resources. They served as valuable sources of support, encouraging and facilitating the integration of climate change issues into the agendas of local governments (Gordon and Johnson, 2017). Despite the previously mentioned points, the notion of leadership or 'pioneers' remains predominantly centred on the national level, often overlooking the significance of the subnational scale (Wurzel et al, 2018).

2.1.4.1 Subnational level

Even though the local level was initially delayed in the process of developing and implementing climate policy, it has become the most dynamic driver of technical change towards a low-carbon energy system, as well as adapting to local climate risks and impacts (Wurzel et al, 2018). After the Paris Climate Agreement in December 2015, there has been a notable expansion within the multilateral framework to recognize and acknowledge the contributions of subnational actors (Gordon and Johnson, 2017). This agreement cemented the transformation and furthermore, recognizes that a substantial part of decarbonization efforts will be initiated or accelerated by a diverse range of actors, including subnational (such as municipal and state/provincial) and non-state actors (Bernstein and Hofmann, 2018).

According to Wurzel *et al* (2018), this recognition stems from the role of cities within the global climate governance context, which emerged amid political impasses in international negotiations. Cities serve as both significant greenhouse gas emitters and hubs for innovative climate governance experiments, capable of scaling successful measures to higher levels of governance. The concept of state 'hollowing out' has prompted the adoption of multilevel and polycentric governance approaches to capture the transition from top-down to bottom-up climate governance. However, existing literature on local climate governance has primarily focused on affluent cities and their networks, overlooking innovative approaches in smaller, resource-constrained cities. This calls for more inclusive research, encompassing a broader range of cities and recognizing the historical emphasis on state leadership over subnational actors in climate governance.

Local political leadership is embodied through the presence of local champions, including elected officials who promote climate action in city governments, and individuals within departments who maintain the agenda through changes in political administrations. These champions tackle substantial and technical challenges while fostering a culture of innovation and collaboration (Anguelovski and Carmin, 2011). Elected mayors and their political orientations, play a crucial role as they are both key drivers and barriers for governance learning. Wolfram *et al* (2019) emphasize the significant role of mayors in enhancing learning processes. Nonetheless, political leaders often lack networks for governance innovation insights, relying on officials and corporate knowledge. This gap highlights the need for collaborative policymaking, promoting open governance learning. Intermediary bodies like local universities and NGOs facilitate knowledge translation, dialogue, interest management, and reflection, requiring as well comparable prerequisites for effective governance learning. Moreover, community climate activism calls for participatory climate governance aligned with alternative values, encouraging diverse experiments and polycentric leadership, requiring empowerment and inclusivity.

Urban climate governance, which spreads across various networks, scales, and policy sectors, emphasizes the need to promote, coordinate, and support action that aligns with shared long-term sustainability and resilience goals. Effective coordination of these multi-actor processes requires orchestrated capacity, to facilitate synergies and minimise trade-offs and conflicts (Hölscher et al, 2018). Orchestration, a form of global governance, involves a mediated connection between governor and governed, with intermediaries helping in governing a set of actors. This approach is aligned with the attributes of global urban climate governance, characterized by voluntary participation, non-hierarchical dynamics, and the lack of coercive sources of authority (Gordon and Johnson, 2017). Rather than direct enforcement, orchestration involves the creation of conditions that voluntary

actors (cities in this case) take actions that align with collective interests or contribute to joint efforts (Gordon, 2018; Gordon and Johnson, 2017).

2.2 Public Leadership Theories

Understanding public leadership theories is relevant for urban climate governance as effective leaders can inspire communities and networks, drive policy changes, and foster collaborations. Their guidance is pivotal in implementing sustainable initiatives, engaging citizens, and both mitigating and adapting to climate challenges in urban areas. Even though defining public leadership is considered complex, it can be conceived as “*the inspiration of others on undertaking collective action in the pursuit of the common good*” (Crosby and Bryson, p. 1268, 2018). City climate leadership then could be performed by both elected politicians and/or by administrative managers and advisors, taking formal responsibility and action on behalf of the city. Effective city climate governance needs leaders capable of assembling and aligning the internal public entities within the respective municipality and mobilising a broad range of actors across the public and private sectors for collective goal setting, planning or even promoting experiments and innovations (Hofstad and Vedeld, 2021). Researchers have used several adjectives to modify the noun “*leadership*” for describing different styles of leadership. Some of them include empowering, responsible, directive, self-sacrificial, paternalistic, heroic, despotic, egoistical, altruistic, relational, and functional, among others (Anderson and Sun, 2017). Hofstad and Vedeld (2021) draw from four different perspectives of public leadership for exploring the role of leadership in different institutional contexts. These are: *transformational*, *transactional*, *pragmatic*, and *co-creational* leadership. As the focus of this study relies on the concept of co-creation, this specific type of leadership and subsequent sub-types (highlighted in red in Figure N°1) are reviewed in depth.

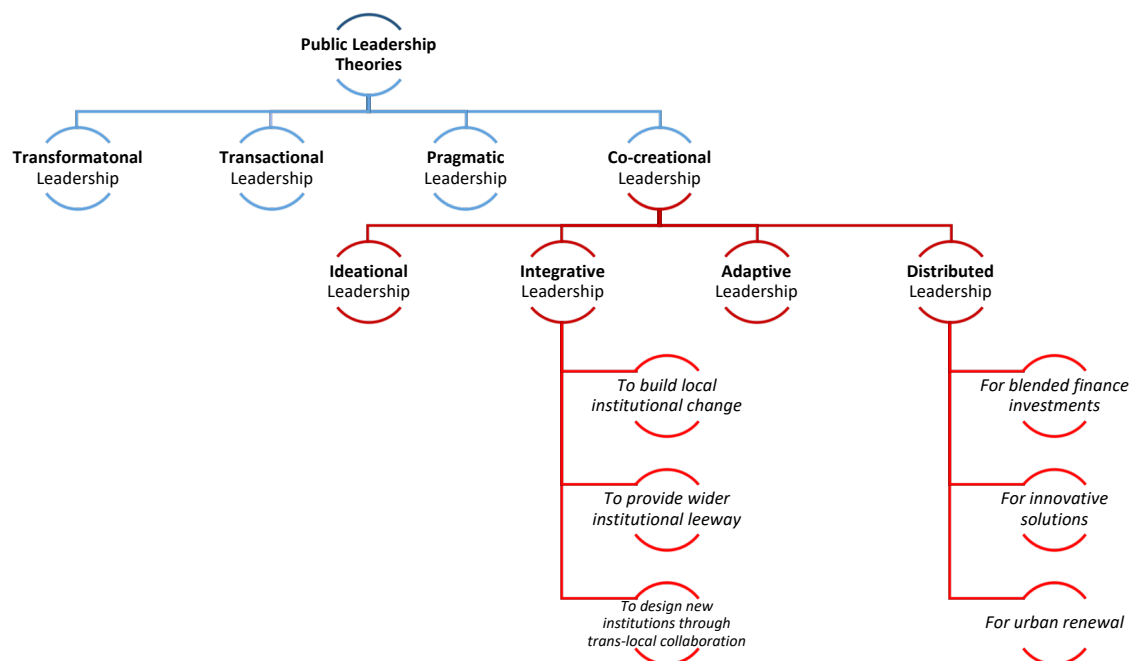


Figure N°1. Diagram of leadership theories addressed in the research. Own elaboration based on Hofstad and Vedeld (2021) and Hofstad et al (2022).

2.2.1 Co-creational Leadership

Hofstad and Vedeld (2021) proposed the label of *co-creational leadership* from various different collaborative-oriented leadership theories, such as facilitative, collaborative, and distributive leadership, among others, which can be regarded as its foundations. Torfing *et al* (p. 802, 2016) define co-creation in the public sector as a “*process through which two or more public and private actors attempt to solve a shared problem, challenge, or task through a constructive exchange of different kinds of knowledge, resources, competences, and ideas that enhance the production of public value in terms of visions, plans, policies, strategies, regulatory frameworks, or services, either through a continuous improvement of outputs or outcomes or through innovative step-changes that transform the understanding of the problem or task at hand and lead to new ways of solving it*”. Co-creation can be regarded as an active form of collaboration, taking place across policy and implementation processes (Hofstad *et al*, 2022).

The main categories of actors involved in co-creational processes are the responsible (public actors), the affected (lay actors), the interested (stakeholders), and resource-controlling ones (experts, companies, and financing institutions). Public actors can be politicians, public managers, or frontline staff, while private actors implicated can be service users and their relatives, voluntary groups of citizens, civil society organisations, social enterprises, private corporations, among many others (Torfing and Sorensen, 2016; Hofstad and Vedeld, 2021).

Co-creational leadership for climate transformation differs from other types of leadership in that it seeks to change both common wisdom and established practices that facilitates innovation (Hofstad *et al*, 2022). Also, it focuses on the collaboration between concerned actors rather than a leader-follower relation. City officials employ some key co-creational leadership attributes, such as the mobilization of stakeholders. By doing this, they engage, inspire, and motivate those responsible, affected, and resourceful actors. In addition, the following concepts are considered as important within this leadership strategy:

- Capacity building: Convene collaboration, facilitate, and give direction to interactive processes by issuing a formal mandate or creating persuasive storylines. This might challenge state-region-local hierarchies and transgress boundaries between sectors or ‘silos’.
- Design of collaborative platforms and arenas: Provide physical and/or digital opportunities and rules that lower the transaction cost of co-creation. In other words, define the structure and set the basic ground rules under which collaboration takes place.

These two concepts create an atmosphere of trust and ownership, enabling knowledge sharing, commitment, expanding boundaries, and solving problems and dilemmas. It also creates fertile ground for taking risks and experimentation (Hofstad *et al*, 2022; Hofstad and Vedeld, 2021).

The concept of co-creation has also been related to public administration and governance theories. Torfing *et al* (2016) present how co-creation is key to transform the public sector from a legal authority and service provider to an arena of collaborative innovation and problem solving. It can be drawn from the latter that so called New Public Management (NPM), an approach that states that government should be managed as a private business, reducing their public, political and democratic features, has failed to fulfil its role. Here is where New Civic Leadership (NCL) takes its place, providing

an alternative to NPM by offering place-based leadership in order to co-create new solutions to public problems, drawing on the strengths of civil society, market, and the state, therefore, enhancing the quality of life at the local level (Hambleton, 2019). This new public administration paradigm requires public organizations and professionals to work together between institutional limits, pushing them to share experiences, resources, and ideas of citizens, users, civil society organizations, and private firms (Torfing et al, 2016).

2.2.2 Typology of Co-creational Leadership for Urban Climate Transformation

Hofstad *et al* (2022) developed a *typology of co-creational leadership* with a focus on urban climate transformation. The typology serves two aims: it offers nuanced insights into how contextual factors shape unique challenges for co-creational city leadership and provides a framework to explore the needs of City officials leading co-creation efforts. This typology consists of two dimensions, *leadership authority* and *leadership purpose*. Leadership authority relates to the institutional attributions of city leadership for enhancing co-creation in two different categories, polycentric and multilevel governance systems. On the other hand, leadership purpose refers to the engagement between co-creational leaders with concerned actors, through the core categories of policy design and implementation.

The authors identify four types of co-creational leadership: ideational, integrative, adaptive, and distributed leadership. In addition, the typology also delineates operative goals, actors, mechanisms, and challenges related to each co-creational leadership type. As presented in Table N°1, these elements acquire relevance at the time of comparing them within each dimension of the typology.

- **Ideational Leadership**: Addresses polycentric contexts where city leaders lack direct authority. It involves engaging diverse actors (public and private) in co-designing climate goals, fostering a common vision, and enhancing governance efficiency within a broader framework, establishing the foundations for collective climate action (Hofstad and Vedeld, 2021; Anderson and Sun, 2017).
- **Integrative Leadership**: Operates in multilevel governance, co-designing institutions, and policies. Its aim is to co-create new or adjusted institutions and policies and ensure policy integration across departments and sectors. Three distinct approaches of integrative leadership are identified, as summarised in Table N°1 below.
- **Adaptive Leadership**: Operates under multilevel governance, driving policy implementation and urban development. Its key role lies in co-implementing innovations for decarbonisation and sustainability across infrastructures, energy, transport, and socio-economic systems, ensuring resilient urban structures.
- **Distributed Leadership**: Involves collaborative implementation in urban settings of green innovation within polycentric governance. This strategy is pivotal in urban governance strategy, recognized in relevant scholarship, emphasizing collaborative green initiatives and networked experimentation in urban climate governance (Bulkeley and Castán Broto, 2013; Vedeld et al, 2021). Three distinct approaches of distributed leadership are identified, as summarised in Table N°1 below (Hofstad et al, 2022).

Ideal Leadership Type	Ideational Leadership <i>(for co-created goal setting)</i>	Integrative Leadership <i>(for institutional change)</i>	Adaptive Leadership <i>(for implementation and transformation of the urban fabric)</i>	Distributed Leadership <i>(for green growth and technology solutions)</i>
Leader(s) Role Description	Ideational leaders lead the co-design of common climate visions, goals, and policies, calling for private, civil and public actors operating under a polycentric governance logic.	Integrative leaders lead co-design policy and institutional change, assuring both policy integration and alignment between municipalities and expand local room for steering under a multilevel governance system.	Adaptive leaders engage in co-adjusting and co-implementing innovation and transformation of both infrastructures and systems pertinent to the urban fabric for local implementation within a multilevel governance system.	Distributed leaders work to co-implement local experimentation and technology innovations between broad polycentric ecosystems of private, civic, academic, and public actors in order to achieve behaviour change and self-governance.
Systems of governance	Polycentric governance logic	Multilevel governance system	Multilevel governance system	Polycentric governance logic
Purpose	Policy design	Policy design	Policy implementation	Policy implementation
Aim	Early engagement with actors to co-design a mutual vision and/or goals to guide their actions.	Co-designing new or adjusted institutions and policies, ensuring the integration of climate policies across departments, entities and sectors.	Co-adjustment and transformation on decarbonising the urban fabrics, such as energy systems, transportation infrastructures and land use.	Innovative solutions, co-experimentation, green tech development and scaling out.
Core Actors	Sympathetic circle of actors, often involving public agencies, private business, research/university institutions, civil society/non-profit organisations, and lay actors (citizens).	Core stakeholders mutually dependent and nested governmental actors.	Core stakeholders as responsible actors (public authorities), resourceful (companies) and interested actors (organizations).	Sympathetic circle of actors, involving public agencies, private business, research/university institutions, civil society/non-profit organisations and lay actors (citizens).
Co-creational leadership mechanism	By conveying and aligning through inspirational motivation.	By convening and aligning actors with mutual interest, focusing on both institutional intentions and barriers.	By creating a coalition seeking transformation through negotiations and co-development of solutions.	By mediating and negotiating to facilitate, conform and group forces towards action and self-governance.
Co-creational leadership challenges	Formulate actionable ideas that resonate with a broader set of actors with different interests.	Assert authority on key institutions, expanding local room for manoeuvre.	Assert authority on infrastructures and systems to improve required adjustments and transformations.	Relinquish authority by supporting and steer action by others.
Specific applications	Not applicable.	<ol style="list-style-type: none"> Integrative leadership to build local institutional capacity. Integrative leadership to provide wider institutional leeway. Integrative leadership to design new institutions through trans-local collaboration. 	<ol style="list-style-type: none"> Adaptive leadership for blended finance investments. Adaptive leadership for innovative solutions. Adaptive leadership for urban renewal. 	Not applicable.

Table N°1. Overview of the four co-creational leadership ideal types. Own elaboration based on Hofstad et al (2022).

2.3 Positioning of the Research

This research study aims to expand and strengthen the existing knowledge on leadership strategies and mechanisms that can effectively support co-creation, learning, and innovation in favour of the urban climate transition. In line with the topic addressed in this dissertation, the most recent academic work is primarily provided by Hofstad *et al* (2022), who proposed a *typology of co-creational leadership* as described in the previous section. This typology helps to understand how city actors perform leadership in co-creation as an instrument for climate transformation, thereby filling a gap in urban climate governance scholarship and contributing to broader discussions of collaborative governance. By drawing on a comparative study between three Scandinavian cities and the city of Cape Town, the typology responds to calls in the urban climate governance literature to move beyond the Global North when conducting empirical studies. In a similar vein, previous studies from Hofstad and Vedeld (2021) and Vedeld *et al* (2021) also seek to address scholarship gaps by providing insights into understanding city climate leadership, using Oslo in Norway as a case study. The first study draws from public administration leadership theories (including co-creational leadership), exploring their conceptual foundations, contributions, and limitations. The second study, published the same year, explores urban polycentric governance leadership, investigating the interplay of public leadership, climate goal-setting, institutional design, and integrative, interacting governing instruments for collaborative climate action.

Apart from the work by Hofstad *et al* (2022), no other research has been identified that delves into issues of leadership specifically in relation to climate change within the city of Cape Town. The leadership focus of this study contributes to a growing body of locally oriented literature that has emerged in recent years on topics such as climate policy, urban governance, adaptation and mitigation in the context of Cape Town. One of these studies, carried out by Davidson *et al* (2016), assessed 15 years of Cape Town's sustainability policies. As challenges persist due to complex issues, policy changes aimed at reducing uncertainty, but an expanding government role introduced new uncertainties. The city government's traditional hierarchical structure obstructs inter-departmental cooperation for tackling complex problems. To address these issues, Davidson *et al* (2016) propose integrating sustainability into all departments, allocating resources, and fostering shared values through open dialogue and city-wide learning. Similarly, Ziervogel *et al* (2022) emphasize the need for transformative climate change adaptation at the community level, as current policies lack focus on this aspect. This article highlights a Cape Town water governance project that employed transdisciplinary research to support capacity building, emphasizing community-level knowledge co-creation. The study suggests that a shift from top-down knowledge transfer to context-specific understanding can lead to more transformative adaptation.

Finally, a book published by Cartwright *et al* (2012) titled "*Climate Change at the City Scale: Impacts Mitigation and Adaptation in Cape Town*", provides a fresh outlook on climate change, emphasizing the critical role of cities, often overlooked, in the global economy. Focused on Cape Town, it captures insights from the innovative Cape Town Climate Change Think Tank, which researches urban governance, climate impacts, mitigation, and adaptation in the city. A follow up book entitled '*Mainstreaming Climate Change in Urban Development: Lessons from Cape Town*', edited by Scott, Davies and New (2019), further extends

the research on climate change planning and actions in Cape Town, particularly looking at mainstreaming climate considerations in sectoral functions and departments. But it does not explicitly include a focus on leadership strategies, which is what this study adds.

3 METHODOLOGY

This chapter provides an overview of the methods employed in this study. Initially, the philosophical assumptions and theoretical framework that influence the research formulation is outlined, followed by the qualitative research design. Additionally, the rationale behind utilizing an abductive research approach and selecting a single case study as the primary research method is discussed. Lastly, the data collection and the analysis technique employed in the research is described. In Figure N°2, a simplified overview of the methodological process is presented.

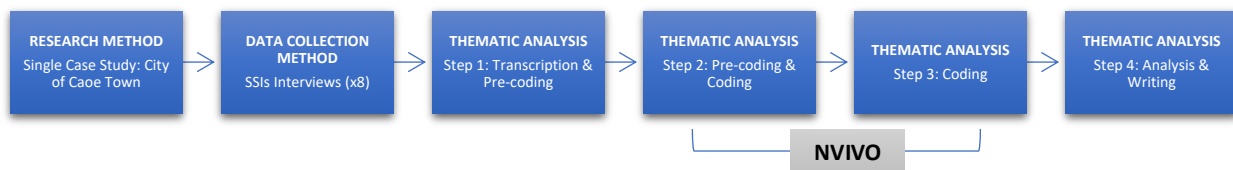


Figure N°2. Methodological Process. Own elaboration.

3.1 Philosophy of the Research: Social Constructivism

The philosophical assumptions that underpinned this qualitative research have shaped the research questions and the way information was gathered and processed. Explaining these philosophical assumptions enables a better understanding of the methodological choices made in each subsequent section of this chapter. When conducting qualitative research, inquirers make assumptions based on their foundational worldviews, paradigms, and beliefs (Creswell, 2007). The *methodological approach* refers to procedures of qualitative research, following an inductive logic, shaped by the inquirers experience in data collection and data analysis. Inductive logic stems from empirical realities on the ground, rather than derived from theory (Creswell and Poth, 2018).

Philosophical assumptions are frequently applied with interpretive frameworks, such as paradigms or guiding theories that orient the research (Denzin and Lincoln, 2011; Creswell and Poth, 2018). The *social constructivism paradigm* aligns with the scope of this research. Social constructivism centers participants' views of a specific situation, which is viewed through the lens of public leadership theories. Together, participants construct their own meaning for the promotion of a low-carbon development and a climate-resilient city. Open-ended questioning is used to facilitate this process, as researchers listen to what participants say or do in their daily lives (Dubois and Gadde, 2002; Creswell, 2007).

The philosophical assumptions take different forms depending on the interpretive framework applied. Thus, the connection between social constructivism and the inductive emergent design method is the preferred choice for studying the topic, achieved mainly through in-depth interviews. The logic of the inductive research approach will be discussed further in *section 3.3* of this chapter, as it relates to the scope of this study.

3.2 Research Design: Qualitative Research

This study is designed from a *qualitative* perspective, focused on obtaining in-depth knowledge about co-creational leadership strategies employed within the city of Cape Town. Qualitative research is interpretive in nature, seeking to understand the meaning individuals assign to their lives, experiences, and the structures of the world. Furthermore, qualitative researchers prioritize the process over the outcomes, following an inductive logic and establishing themes or patterns within the research (Ochieng, 2009), aligning well with the constructivist approach. Voices of participants, researcher reflection and a complex description and interpretation of the problem, are included in the write up of the research to expand the literature on the matter (Ochieng, 2009; Creswell, 2003). Based on this, a qualitative approach, incorporating open-ended interviews with key actors within an in-depth single case study, was taken to conduct this research.

3.3 Research Approach: Abductive Research

This research employs an *abductive* logic, which differs from the previously mentioned inductive approach, noted in section 3.1. Inductive logic builds concepts, hypotheses, and theories from empirical evidence (Ochieng, 2009), while deductive logic starts by developing propositions from theory, making them testable (Creswell, 2007). Abductive logic combines elements of both by focusing on the relationship between everyday language and concepts (Dubois and Gadde, 2002).

The nature of the research involves matching theories with observed reality, and therefore the process of *systematic combining* suggested by Dubois and Gadde (2002) is relevant. This process is non-linear and iterative, where theoretical and empirical frameworks, as well as case study analysis, evolve simultaneously, leading to the testing and further development of theories. Systematic combining involves going back and forth between frameworks, data sources, and analysis, with no pre-established patterns. It entails combining sources of evidence, shifting between analysis and interpretation (Dubois and Gadde, 2002; Dubois and Gadde, 2014).

3.4 Research Method: Single Case Study

The primary concern for qualitative researchers is to locate a suitable research setting where the phenomenon of interest can be observed frequently and intensely. In this research, the primary objective is to gain in-depth knowledge of leadership strategies employed by public leaders in Cape Town, South Africa, a city in the Global South documented for being progressive in tackling climate change issues. Therefore, a *case study* method is chosen as the main method of research, which involves examining and investigating a specific phenomenon or context using various data collection and analysis methods, which result in a case description and case-based themes (Creswell, 2007).

Based on the research objectives, a *single case study* is selected over multiple cases, as it provides a deeper understanding of the phenomena or context studied. Although the number of case studies

influences the confidence in the representativeness of the findings, the observation time is less for the researcher to study the case, which is suitable for the scope of a coursework Master's dissertation (Gustaffson, 2017).

The city of Cape Town is an appropriate research subject due to its unique features. Cape Town is recognized as an early adaptor in climate change, with ongoing work on climate risk assessments and adaptation planning (Taylor, 2016). It is also recognized by Araos et al (2016) as an extensive adaptor, being a city positioned in the Global South that has made considerable strides to addressing climate risks. Moreover, the City of Cape Town participates in various international networks on climate change, such as C40 Climate Leadership Network, ICLEI – Local Governments for Sustainability, the Global Covenant of Mayors for Climate, and the Rockefeller Foundation's work on resilient cities, through the 100 Resilient Cities program (Hofstad et al, 2022). More of these contextual factors will be described in chapter 4.

3.5 Data Collection Method: Semi-structured Interviews (SSIs)

The study relies on in-depth, semi-structured interviews (SSIs) as the primary data source to understand the phenomenon under study. The key informant interviews provide a set of primary data that was previously collected by another academic with years of experience, thereby enhancing its reliability (Creswell and Poth, 2018). The interviews were conducted between October 2020 and February 2021. They included eight respondents representing Cape Town stakeholders and climate leaders involved in the reduction of GHG emissions and/or the increase of climate resilience in the city. These respondents were selected from different sectors, being represented by local government, NGO (Non-government organization), NPC (Non-profit Company) and international development organizations.

All interviewees had several years of experience working with both environmental and climate issues in South Africa, particularly in the city of Cape Town and/or the Western Cape Province. The questions in these interviews were primarily designed to gather viewpoints on how Cape Town has been forging the climate and sustainability agenda, with a special focus on the leadership strategies for co-creation, ways of working across different branches and directorates, and the coordinating mechanisms within the city government (referred to as 'the City'), as well as with external actors.

In addition, interviews provided further information on the design and participation in specific co-creation arenas, who the participants were, how interactive processes were conducted and developed, and what the main outcomes were. By employing semi-structured interviews, it was possible then to allow respondents to freely elaborate and encourage descriptions based on their experience and knowledge about the development in the city regarding different topics such as energy, city resilience, climate change policy, among others.

Interviews were all held online (due to COVID-19 restrictions), with the presence of one, two or three researchers, and with an average duration of one hour each (details on the duration of each interview is shown in Table N°2). Prior approval was obtained from interviewees to treat everybody's data appropriately, particularly for ethical purposes. All interviews were recorded and later transcribed. Information about the respondents and interview process is summarized in Table N°2. Prior to conducting

the interviews, a summary document explaining the research context was sent to the interviewees, and the interview guide with the open-ended questions was also sent in advance. Both summary and interview guide can be found in Annex N°1 and N°2 respectively.

Interview N°	Respondent Information				Interview Information			Knowledge of topic
	Sector	Organization	Position	Date	Duration	N° of Researchers present	Quotation / Citation approval	
1	NPC	Sustainable Energy Africa (SEA)	Senior Executive	30/10/2020	1:05:04	1	Up to researcher	Energy
2	NPC	Western Cape Economic Development Partnership (EDP)	Operational Executive	03/11/2020	1:00:24	3	Not quoting directly	Adaptive Management
3	International organization	C40 Cities	Mid-level Manager / Technical Expert	17/11/2020 18/11/2020	1:05:10 43:03	3	Approval given	Energy, C. C. Policy
4	Local government	City of Cape Town	Senior Executive	30/11/2020	1:08:14	3	Approval given	Energy
5	Local government	City of Cape Town	Mid-level Manager / Technical Expert	02/12/2020	1:19:05	3	Approval given	C. C. Policy
6	Local government	City of Cape Town	Senior Executive	10/12/2020	1:15:33	1	Approval given	City Resilience
7	NGO	Green Cape	Senior Executive	13/01/2021	59:51	2	Approval given	Green Business
8	Local government	City of Cape Town	Political Representative	04/02/2021	1:10:32	2	Approval given	C. C. Policy, City Resilience

Table N°2. Summary of respondents. Own elaboration based on collected interviews.

3.5.1 Interview Ethical Considerations

A document signed by each respondent ensured their anonymity by removing any sort of identifying information they provided during the interview, such as their names and exact job positions. In relation to quotations, they were not presented entirely, as often only a portion of the quote that was relevant to the theme being analysed. In the specific case of the operational executive from EDP, who requested not to be quoted directly, a rephrased passage maintaining the essence of the response was thoughtfully composed to respect confidentiality while conveying the key message. In both cases, it was ensured that all extracts represented accurately the pertinence of the responses within each of the themes.

3.6 Data Analysis Method: Thematic Analysis

Thematic analysis was employed to identify patterns across the interviews related to leadership strategies and organisations involved in advancing the climate agenda. Thematic analysis is a qualitative method that seeks to identify, analyse, and report patterns within data (Braun and Clarke, 2006). It involves

searching for themes or patterns emerging as relevant to the description of the phenomenon under study, through a careful identification process of reading and re-reading of the data. The researcher, by taking a closer look at selected data and performing coding and category construction, unveils the themes pertinent for further analysis (Fereday and Muir-Cochrane, 2006; Bowen, 2009).

According to Braun and Clarke (p.82, 2006), a theme “*captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set*”. Given this, the researcher's judgement becomes necessary while addressing the coding process, as it must define what counts as a theme (or pattern) and the size this should be. Even though there are no hard rules for defining the prevalence of a theme, in this research it was both driven according to the research questions and the articulation of the themes by the interviewees. In addition, themes were identified using an abductive research approach, through a non-linear and iterative thematic coding, that started with the overall observation of the phenomena, and worked backwards to propose possible explanations.

As data cannot be coded in an epistemological vacuum, the researcher must make clear the theoretical informants of the thematic analysis. As indicated previously, theoretical frameworks carry several assumptions regarding the nature of the data, what it represents in terms of the world, reality, and so forth. Thematic analysis in this study was employed within a social constructivism paradigm, aiming to theorize sociocultural contexts and structural conditions that shape human behaviour, including ways of organising human interactions with environmental processes such as climate change (Braun and Clarke, 2006).

3.6.1 Tool Employed: NVIVO

The practicalities of thematic analysis were implemented using NVIVO, a software tool developed by QSR International. NVivo is a software tool designed specifically for qualitative data analysis, such as content analysis and narrative analysis. NVivo provides researchers with a dedicated workspace where they can effectively store, manage, query, and analyse unstructured data of various types, including text, images, audio, video, among others. It also offers a range of qualitative analysis functions, enabling users to efficiently sort and filter raw data, establish connections and relationships within the data, define themes and categories, visualize analysis results, and generate comprehensive reports (Phillips and Lu, 2018). Given the qualitative nature of this study, NVivo 12 was chosen as the primary tool for conducting the thematic analysis.

By utilizing this software, it was possible to categorize data that would have otherwise required significant manual effort. NVivo's features made it possible to import textual data, such as interviews transcripts, and create codes and nodes to represent the themes. This made it possible to query text, export codebooks, and create concept maps, among other functionalities. As a result, the process of sorting and retrieving coded themes became significantly more efficient, saving valuable time in the analysis process. Even though, and similar to other computer assisted qualitative data analysis software (CAQDAS), using NVivo can minimize researcher bias. However, a drawback associated with qualitative data analysis is that

it may not always provide the evidence required to support observability and measurability (Feng and Behar-Horenstein, 2019).

3.6.2 Steps of Thematic Analysis

This study employed a framework for conducting qualitative thematic analysis based on the stages delineated by Braun and Clarke (2006). The data coded with the software consisted of certain passages from the responses of the eight interviewees, which supported the creation of subsequent themes and sub-themes. The latter represented the units of analysis. The codes and themes emerged from statements within and across the interviewees responses that offered information relevant to each of the research questions guiding the study.

Despite being presented as a linear step-by-step procedure, the analysis conducted within this methodological framework was an iterative and reflective process, involving constant back-and-forth movement. The following four steps describe the analysis process, starting from the import of transcripts to the write-up of the report, as illustrated in Table N°3.

Process	Step	Process description
Transcription	1	Transcription was completed by a research assistant in advance of this study. Only checked transcripts against the original audio files.
Pre-Coding	1	First reading. No notes.
	1	Second reading. Look for potential codes and themes.
Coding	2	Use of NVivo to code passages of interest and sort them into potential themes.
	3	Generation of mind map to analyse code suitability on respective themes.
	3	Consolidation of themes by adding and/or redistributing codes.
Analysis and Writing	4	Identification of the role and validity of themes into the study through narrative logic.
	4	Writing of narrative (story) supported by excerpt boxes.
	4	Visual summary of connection between themes.

Table N°3. Summary of theme generation and development. Own elaboration based on Braun and Clarke (2006).

Step 1: Getting familiar with the data entailed first reading through all the interview transcripts and simultaneously listening to the audio files, without coding or taking any notes but checking the transcripts against the audio files for accuracy. The second round of reading involved looking for passages in the responses that helped to answer the research questions, especially identifying who the main actors were, their constraints, and the co-creational leadership strategies employed. The latter corresponds with a deductive logic, with the research questions performing as general premises. Re-reading was complemented by annotating passages of interest with one or two potential concepts that could become themes.

Step 2: After noting down potential passages and codes in the previous step, NVivo was employed to generate the initial codes from the interviews. This process was done by selecting extracts of interest and labelling them from a candidate theme list, which took the form of nodes within the software interface. In NVivo, nodes resemble “sticky notes” that researchers use to indicate that a specific passage belongs to a particular theme or topic (Wong, 2008).

The coding in this study was based on theory-driven themes rather than data-driven ones, as the themes were developed around specific questions that I intended to code. I followed Braun and Clarke's (2006) suggestion of not imposing any restrictions on the number of potential themes or patterns during the coding process. Also, it was quite common to find extracts of responses coded under more than one specific theme. Codes that did not belong to any of the candidate themes, were sorted into a temporary theme named “Miscellaneous”.

Step 3: After assigning all the codes to a theme (node), either temporarily or definitively, the next step involved consolidating themes. By generating a mind-map (Figure N°3) as a visual representation, it was possible to analyze if certain codes fitted or not into a specific theme. Also, it was possible to notice whether candidate themes were pertinent to the study, if there were enough codes to support their existence, or if they needed to be collapsed into an individual theme or expanded into sub-themes.

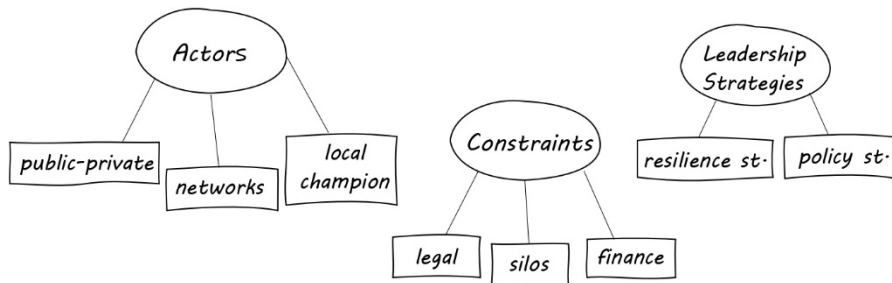


Figure N°3. Example of preliminary mind-map showing potential themes and sub-themes. Own elaboration.

Once satisfied with the candidate themes, it was necessary to code additional data that has been missed, especially for themes that had few codes to support their existence, looking for passages that could fit into them. Re-coding was an ongoing organic process (Braun and Clarke, 2006) that stopped when refinements were no longer adding anything substantial, and themes became consolidated. The Miscellaneous theme was finally deleted as most of the codes within were allocated to other themes.

Step 4: When all themes were fully sorted, the final step involved reporting the findings of the thematic analysis. This entailed identifying what each of the themes contributed to the overall analysis through a narrative logic that assembled the complex story presented by the dataset. The constructed narrative was designed to convince the reader of the merit and validity of the thematic analysis (Braun and Clarke, 2006). According to Creswell (2007), validation is a way to evaluate the accuracy of the results, as described by both the researcher and the participants.

<p>“And I do think that Cape Town has contributed in quite a big way in from being a developing country city, sharing its we push back a lot on some of the tools and resources because we say, look, this doesn't not how the city works.”</p>	<p>T1_ST1_01</p>
<p>Mid-level Manager/Technical Expert, International Network</p>	

The dissertation, in chapter 5, presents a narrative for each theme accompanied by passages of responses in the form of “*excerpts boxes*”. These boxes (Figure N°4) consist of the quotation of the selected passage, followed by the respective respondent, an identification code, and a color assigned to each theme for better visualization. In Figure N°5, the nomenclature of the identification code is distilled. Themes that do not have any sub-themes in their inner structure, were referred as “*standalone themes*”. Before delving into the narrative of a theme a concise overview of the respective theme is provided, introducing the key topics addressed.

Figure N°4. Example of an excerpt box. Own elaboration.

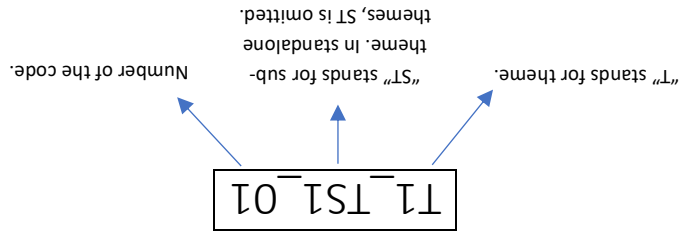


Figure N°5. Identification code nomenclature. Own elaboration.

4 CITY OF CAPE TOWN CONTEXT

The City of Cape Town serves as the provincial capital of the Western Cape Province and is home to the National Assembly of South Africa. As the second-largest city in terms of population with approximately 4 million residents, Cape Town holds a significant position in the country's political and demographic landscape (City of Cape Town, 2022a). This chapter outlines the various factors that shape the context of Cape Town, where the climate agenda has taken shape. The first section discusses the city's political system, which governs the city and decisions regarding policies, services, and public budget allocations. The socio-economic factors section then highlights the complex issues facing Cape Town, including the legacy of apartheid, spatial inequality, and uneven economic growth, which have given rise to significant disparities between the city's wealthy and poor communities. The section also covers the city's diverse economy, unemployment, and the informal economic activities that many residents rely on. The environmental factors section, describes the natural features of the city, including its Mediterranean climate, diverse range of flora and fauna, and various environmental challenges, such as air pollution, water scarcity, and biodiversity loss. Finally, the text discusses the intersection of climate and development challenges that Cape Town faces, as well as the city government's efforts to integrate climate change into its policies, planning, and operations.

4.1 Political factors

The political system of Cape Town is comprised of a local government responsible for governing the city. The city government, often referred to simply as 'the City', is governed by a council comprised of 231 members elected through a proportional representation system. The council is responsible for making decisions about policies, public services, and budget of the city. The mayor, who is elected by the council, serves as the political head of the City and is responsible for providing leadership and direction to both the council and the city administration. At the time of completing this study (2024), the Democratic Alliance (DA) political party had a clear majority in both the City of Cape Town and the Western Cape governments. There are 116 wards in the city, and each one is represented by a Ward councillor who is elected by the local residents. It is the responsibility of these councillors to advocate for the concerns and interests of their constituents (City of Cape Town, 2023).

The council meets regularly to discuss and address various issues affecting the city, including infrastructure development, social services, and economic growth. The City also has a system of public participation that allows residents to voice their opinions and concerns on various issues affecting their communities. This system enables the City to develop policies and programs that are responsive to the needs of its diverse population (City of Cape Town, 2023).

4.2 Socio-economic factors

Cape Town is a city with complex socio-economic factors, partially influenced by its history of apartheid, spatial inequality, and uneven economic growth. These problems continue to impact the city and its

inhabitants significantly, even in the present day. Therefore, one of the major issues in Cape Town is the huge difference between the city's wealthy and poor communities. The city has a population of approximately 4 million people, with over 25% living in informal settlements, lacking basic services such as water, sanitation, and electricity. These areas are mostly located on the outskirts of the city, far from economic opportunities, perpetuating a cycle of poverty. The city's economy is diverse, having key local economic sectors like tourism, financial services, manufacturing, trade, property development, and community services. This multifaceted economic landscape underpins the city's vibrancy and resilience. However, the city is characterized by a large income inequality gap, with high levels of unemployment. Many residents in Cape Town, who struggle to access formal employment, rely on informal economic activities, which accounts for an estimated 9-11% of employment in the city (City of Cape Town, 2022a). Furthermore, the unemployment level in Cape Town has risen over the past few years to 24.9% (City of Cape Town, 2022a).

To overcome these challenges, the City of Cape Town has been working on several social and economic programs to address poverty, unemployment, and inequality. These programs aim to provide housing, create jobs, and support vulnerable individuals and families through various social assistance initiatives. Despite these efforts, more work is needed to tackle socioeconomic issues that persist in the city and continue to impact its population. The COVID-19 pandemic also had a significant impact on the city, causing economic and social disruption, along with increased health risks (City of Cape Town, 2022a).

4.3 Environmental factors

Located in the southwestern part of South Africa, the Cape Town metropolitan area borders the Atlantic Ocean to the west and Table Mountain to the south, shaped by hills, mountains and rivers that cross over the low-lying coastal plains (City of Cape Town, 2022b). The city has a Mediterranean climate, characterized by hot, dry summers and cool, wet winters driven largely by the presence of the South Atlantic high-pressure system during the summer and passing mid-latitude cyclones in the winter (Wolski et al, 2020).

Cape Town is home to a diverse range of flora and fauna. The city has six vegetation types that can only be found there, including the iconic fynbos vegetation. However, the survival of numerous indigenous species in the Cape are under threat due to habitat fragmentation, the spread of invasive species, and insufficient land management. In addition, the city's coastline is home to a variety of marine life, including whales, dolphins, and seals (City of Cape Town, 2014).

The city faces several environmental challenges such as air pollution, biodiversity loss, and water scarcity. The severe drought from 2015 to 2018, exacerbated by climate change, led to a critical situation known as "Day Zero", where the city was projected to run out of water. To prevent this, strict water restrictions were implemented, urging citizens to reduce their consumption. Although the crisis was overcome with the help of these regulations and a late rainy season, the situation highlighted the urgent need for sustainable water management practices and alternative water sources (Ziervogel, 2019).

4.4 Climate and Developing Challenges in Cape Town

Cape Town faces a range of environmental challenges stemming from the intersection of climate and development, including water scarcity, wildfires, flooding, damage to the coast, infrastructure destruction, health risks, air pollution, heat stress, and biodiversity loss. These challenges are expected to intensify due to climate change and the city's growth. The complexity and urgency of adapting to these challenges are compounded by the diverse physical environment and socio-economic inequality, which give rise to varying levels of climate vulnerability within the city (Scott et al., 2019).

The City has been working to integrate climate change into its policies, planning, and operations since the early 2000s (Taylor, 2019). As a result, Cape Town became a pioneer among cities both in the Global South and around the world by developing an agenda focused on addressing local energy and climate issues (Araos et al, 2016; Taylor, 2016). As mentioned in the previous methodological chapter, Cape Town has unique features that make it an appropriate research subject, such as being an early and extensive adaptor in climate change with ongoing work on climate risk assessments and adaptation planning. Despite being a city in the Global South, Cape Town has performed outstandingly in climate change adaptation and collaborates with various international networks on climate change. The timeline shown in Figure N°6 delineates the primary milestones and key policy and institutional events related to climate issues within the city of Cape Town. The findings presented in the next chapter help understand the actors and leadership strategies involved in making this progress possible.



Figure N°6. Key policy timeline of Cape Town. Own elaboration based on Climate Change Strategy (2021).

5 FINDINGS

This chapter presents the results of the thematic analysis, laying out the primary themes (and sub-themes) derived from relevant interview excerpts, highlighting their significance and the context in which they were provided. After reviewing the set of interviews and applying thematic analysis, relevant extracts were coded and organized into six themes, some of which include subcategories. The identified themes are: 1) *Actors*, 2) *Networks*, 3) *Plans, Programmes, Policies, and Strategies*, 4) *Constraints*, 5) *Co-creational Leadership Strategies*, and 6) *Shifts*. These themes encompass 148 codes in total, with the complete list and respective breakdowns detailed in Table N^o4. While some codes overlap across themes, Co-creational Leadership Strategies remain unique. Lastly, organising the responses into themes made it possible to address the study's research questions.

Theme N ^o	Theme	Sub-theme	Description	Sources	Codes
1	Actors	Public Actors	Individuals or organizations operating under the authority of government.	6/8	15
		Non-state Actors	Individuals or organizations operating independently of government authority.	6/8	15
		Other Actors	Individuals or organizations that do not belong to either public or non-state actors.	4/8	7
2	Networks	International	Organizations collaborating across different countries or regions.	4/8	17
		Local	Organizations collaborating within a specific geographic area or community.	4/8	4
3	Plans, Programmes, Policies and Strategies		Approaches, initiatives, and directives designed to reduce the impact of climate change or cope with its effects.	4/8	12
4	Constraints	Political Constraints	Political factors or institutions that restrict or affect decision-making.	5/8	11
		Financial Constraints	Limitations related to available funds or resources to meet climate-oriented goals.	3/8	4
		Other Constraints	Additional constraints that do not fit as political or financial.	5/8	6
5	Co-creational Leadership Strategies	Ideational Leadership	Type of leadership with policy design as purpose under a polycentric governance logic.	5/8	18
		Integrative Leadership	Type of leadership with policy design as purpose under a multilevel governance logic.	3/8	8
		Adaptive Leadership	Type of leadership with policy implementation as purpose under a multilevel governance logic.	3/8	7
		Distributed Leadership	Type of leadership with policy implementation as purpose under a polycentric governance logic.	4/8	5
6	Shifts		Significant changes in institutions, sectors, and governance structures.	7/8	19

Total Codes: 148

Table N^o4. Themes and sub-themes generated. Own elaboration.

5.1 Theme 1: Actors

The first theme encompasses a total of 37 codes drawn from the eight interviews, reflecting the fact that every respondent had insights regarding the key actors operating in the urban climate governance environment. This theme is closely linked to the study’s first research question regarding the actors involved in the urban climate transition within the city of Cape Town. Given that the identified actors operate in various sectors, this theme was divided into three different sub-themes or categories: *Public Actors*, *Non-state Actors* and *Other Actors*.

The sub-theme *Public Actors* consists of 15 codes retrieved from six different interviews as their sources. Throughout the selected codes, it can be noticed that the most mentioned key actors in the public sector are the City of Cape Town, its last mayors, and other politicians (Figure N^o7).

<p>Sub-theme – Public Actors: City of Cape Town ("the City"), Mayors, and Other politicians.</p>
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Figure N^o7. Sub-theme: Public Actors.

The City of Cape Town is regarded by several interviewees as a city government undertaking action towards climate change, leveraging its position as a developing city to share, knowledge and resources. Furthermore, the City is recognized for several key actions, including its work on a Climate Action Plan (CAP), its proficiency in developing and regulating such plans and policies, its global leadership in Carbon Disclosure Project (CDP) reporting, and its commitment to carbon neutrality. These actions are highlighted in the following excerpts:

<p><i>"And I do think that Cape Town has contributed in quite a big way in from being a developing country city, sharing its we push back a lot on some of the tools and resources because we say, look, this doesn't not how the city works."</i></p>	<p>T1_ST1_01</p>	<p>Mid-level Manager/Technical Expert, International Network</p>
<p>The EDP respondent states that the city is dedicated to achieving carbon neutrality and is actively pursuing a climate action plan.</p>	<p>T1_ST1_02</p>	<p>Operational Executive, Western Cape Economic Development Partnership (EDP)</p>
<p><i>"I think Cape Town is recognized I think globally as being a leader like for example the CDP reporting process."</i></p>	<p>T1_ST1_03</p>	<p>Mid-level Manager/Technical Expert, City of Cape Town</p>
<p><i>"and I think of Cape Town is that it's, it's very good at regulating, developing these plans and policies, but it's not necessarily that good at being a responsive local government."</i></p>	<p>T1_ST1_04</p>	<p>Mid-level Manager/Technical Expert, International Network</p>

A technical expert from the City also acknowledged that there is widespread consensus within the City that climate change is real and that action is necessary. Citing strong scepticism expressed politically and publicly in the United States as an example, a senior executive contrasted the situation in Cape Town, suggesting that the city has largely managed to avoid such conspiracies taking hold.

<i>"On the political side of things, the... it's interesting because I know climate change issues are often like very politicized in some parts of the world, but certainly in Cape Town there's almost a unanimous agreement that we need to be doing something. There is no, you know no significant opposition to climate change as being an issue, if you know what I mean. There's nobody saying well it's not a problem or we don't need to do anything."</i>	
T1_ST1_05	Mid-level Manager/Technical Expert, City of Cape Town

<i>"And you know we largely avoided conspiracy in the drought, if you think about it. And think about how during the pandemic conspiracy has really taken hold. Less so in South Africa, although it is here. But you know, very much in the United States. This thing is fake, it's not real. And so sharing data allows us to share risk. And that is around partnering as well. I think Cape Town quite frankly has done very, very well on that."</i>	
T1_ST1_06	Senior Executive (N ^o 2), City of Cape Town

According to the political representative respondent, while some members of the committee acknowledge the efforts made by the City of Cape Town, others strongly believe that the City is still not doing enough despite its current efforts.

<i>"There are committee members who believe that even though we've done quite a bit as the City of Cape Town, there are committee members who strongly feel that the City of Cape Town is not doing enough."</i>	
T1_ST1_07	Political Representative, City of Cape Town

Respondents also mentioned the mayors of Cape Town as relevant actors working towards climate action, each in their own distinct way. The former mayor, Patricia De Lille, is regarded as a climate champion for her stance on reducing the carbon footprint of the city and initiating renewable energy initiatives. Dan Plato, the mayor at the time of the interviews, was not necessarily viewed as an active champion, but respondents suggested that he did not oppose or reverse the work initiated during the De Lille administration. In fact, under Mayor Plato's leadership a fully dedicated department on climate change was established.

<i>"I think we would not have been as far if we didn't have the previous mayor and her very firm stance on reducing the city's carbon footprint and on embarking on renewable energy."</i>	
T1_ST1_08	Senior Executive (N ^o 1), City of Cape Town

<i>"We've seen with the change in mayoral leadership since De Lille left. Even though the current mayor is not against the work, he's not necessarily a champion of it."</i>	
T1_ST1_09	Mid-level Manager/Technical Expert, International Network

<i>"No, I think it was obviously very great to have a mayor who was a very outspoken champion for climate action, but it hasn't affected the day-to-day work or political acceptance of the strategy or action planning processes negatively. I think it's a pretty normal part of the sort of transition process between various administrations as the you know, individual mayors have their own priorities for what is important to them. And, you know I think that... I don't think it necessarily affects negatively you know the implementation work."</i>	
T1_ST1_10	Mid-level Manager/Technical Expert, City of Cape Town

<i>"So when he came over, he actually changed the whole entire department. There was no energy and climate change. So it was his initiative to say listen let's have a department that is going to focus entirely on climate change."</i>	
T1_ST1_11	Political Representative, City of Cape Town

In addition to the mayors, other politicians were also mentioned, primarily for championing climate action and their engagement and understanding with the communities they represent. The City Councillor respondent added that politicians try to avoid politicizing both the debate on climate change and the climate actions being taken by the City, focussing instead on the legacy their work could leave in the foreseeable future.

<i>“So there isn’t, I don’t think, you know there’s a lot of politicians who are champions for climate change action, but yeah I don’t think it’s like at the top of anybody’s agenda for if that makes sense.”</i>	
T1_ST1_12	Mid-level Manager/Technical Expert, City of Cape Town
<i>And also play a very critical role in say, because we understand the communities that we come from. An official might not necessarily understand the diverse communities that we actually serve.</i>	
T1_ST1_13	Political Representative, City of Cape Town
<i>“We try and stay away from trying to politicize every little thing that the city of Cape Town is doing. So with our policy development, it’s driven by politicians but they take the mandate from the political heads.”</i>	
T1_ST1_14	Political Representative, City of Cape Town
<i>“So it’s the politicians that need to stop and think how do we want our cities to look like in the next 20 years, 30 years? What legacy are we trying to leave behind? And then take the people with. But there’s a lot of engagements that need to take place. And as politicians we need to keep the politics away from the climate change debate.”</i>	
T1_ST1_15	Political Representative, City of Cape Town

The sub-theme *Non-state Actors* refers to the various actors that operate outside of the traditional state structures. It comprises 15 different codes gathered from six different interview sources. Reviewing these codes revealed that Non-state Actors primarily consist of three main groups: Academia, Non-governmental organizations (NGOs), and various actors in the private sector (Figure N°8).

Sub-theme – Non-state Actors: Academia, NGOs and Other private sector actors.

Figure N°8. Sub-theme: Non-state Actors.

Regarding academia, some of the main universities in the Western Cape are mentioned as having partnered with the City on climate-related work, Stellenbosch University (SU), University of the Western Cape (UWC) and the University of Cape Town (UCT). For example, Stellenbosch University, through the Centre for Renewable and Sustainable Energy, has contributed local and city scale insights, and UCT has provided inputs and reflections to the Sustainable Energy Markets Department. The Council for Scientific and Industrial Research (CSIR) was also mentioned as an actor and contributor to Cape Town’s green transition and climate change agenda.

<i>“So I would say they are mainly informal or they are where we have put out pieces of work for research for example. So we work with the Stellenbosch University, the Center for Renewable and Sustainable Energy Studies. They conduct research that is quite relevant to the local scale. Not all universities seem you know seem to take a subnational scale perspective. So we work well with Stellenbosch because they do have a number of initiatives that look at city level applications.”</i>	
T1_ST2_01	Senior Executive (N°1), City of Cape Town

<i>"And then there are certain parts of UCT as well. I must say we've used Anton Eerberhardt [sp] who is at the Business School. We have used his interest in this area to help further our work. So we would call on him to provide inputs or reflect on developments within the department."</i>	
T1_ST2_02	Senior Executive (N ^o 1), City of Cape Town

Since the City and academia share similar interests and aspirations, and given Cape Town's rich policy environment, there is a need for a platform to engage more with academia, particularly focusing on innovation.

<i>"I think our working relationship with the academic sector, correct me if I'm wrong Anna, but I think it's generally mostly on the same page about levels of ambition, what is feasible, where focus needs to be."</i>	
T1_ST2_03	Mid-level Manager / Technical Expert, City of Cape Town

<i>"And I think that it is really worth noting that in the Cape Town context there is a ton of really, really excellent policy and think tank and I guess academic institutions that are driving the thinking into the green economy."</i>	
T1_ST2_04	Senior Executive, GreenCape

<i>"And then as I've said we've put out some tenders for research work that's either the CSIR or some universities have been interested in. But unfortunately there's no platform where we engage more regularly."</i>	
T1_ST2_05	Senior Executive (N ^o 1), City of Cape Town

<i>"Again it's where we have made contacts or have contacts, where the team has contacts. I do think that there should be a platform, particularly around innovation, so for example the University of the Western Cape is doing work around batteries and it's an important area for our work. And we would like to have more engagement with the universities who are doing research on innovative aspects for you know new energy future in South Africa."</i>	
T1_ST2_06	Senior Executive (N ^o 1), City of Cape Town

Regarding NGOs identified in the study, Sustainable Energy Africa (SEA) has been leading an urban energy network in South Africa. Often regarded by other more activist-oriented NGOs as a consulting agency, SEA staff consider it a capacity building NGO. SEA focuses on building capacity in urban energy networks and relationships, rather than merely providing consulting services. Having successfully managed the South African urban energy network for 16 years, SEA maintains a transparent mission and agenda. SEA recognizes the importance of striking a balance between fulfilling its own needs and accommodating the needs of others. The interviewee representing SEA noted with interest how donors frame non-governmental agencies in developing countries as grassroots movements, while in the Global North NGOs are understood to that have a mission and highly skilled and professional staff.

<i>"So, we are very much here to try and build that capacity into the space, rather than you know. So which makes it quite often the more activist type NGOs sort of think we are, they can see us, there's a similarity between us and consultants and we're like it's very different. It's really different. So it's the capacity over time, and the networks and relationships. So we have been running an urban energy network in the country kind of for 16 years or so as well. So, the mission and agenda is very explicit, and then obviously we have to mix and match."</i>	
T1_ST2_07	Senior Executive, Sustainable Energy Africa (SEA)

<i>"Which is another to me an interesting thing is that the framing of non-governmental agency by donors as well as by us as recipients of donor money is, it tends to be in that developing cell, it tends to be restricted to this notion of the grassroots movement or NGOs supporting the community on the ground. And, whereas if you look at the North, there are a lot of NGOs in the space of being agencies, so they are outside of</i>	
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<i>government, and they have a mission. So it's not that they are just a technical consultancy, but they are highly professional, highly skilled agencies."</i>	
T1_ST2_08	Senior Executive, Sustainable Energy Africa (SEA)

Interviewees refer to several organizations that engage with the City, some of them leading and driving the green transition through different mechanisms and platforms. The City's Sustainable Energy Markets Department engages with the private sector through the Energy Water Waste Forum, which brings businesses together to share their experience on topics such as sustainable green procurement and waste and energy management. This department is also supported by SAPOA (Property Association of South Africa) and the Green Buildings Council of South Africa, through which the City is able to interact with those in the construction sector that are promoting the green shift. In terms of renewable energy, the South African Photovoltaic Industry Association (SAPVIA) works with and supports the City of Cape Town.

<i>"The department that I'm based in... Sustainable Energy Markets... Is involved in convening the Energy Water Waste Forum. Which does bring together businesses to just, kind, of share their experience of sustainable green procurement or dealing with waste and energy issues and things like that."</i>	
T1_ST2_09	Mid-level Manager/Technical Expert, International Network

<i>"So we have good relationships with SAPOWA [sp], the Property Association of South Africa, and the green buildings council, and they are obviously very supportive and pushing let's get this done, we can do it. And then, on the renewable energy side, we have quite good relationships with SAFEA [sp] the South African PV industry Association and we work with them in terms of trying to provide assurance to our citizens in terms of installers and installations. And again they are very supportive in our longer term goals and what we're trying to do. We don't have as much contact with the wind Association. We've met with them a few times but we don't actively work with them and we don't work with the national renewable energy association."</i>	
T1_ST2_10	Senior Executive (N ^o 1), City of Cape Town

<i>"So, the construction sector, there are those who are interested in the greener aspects and then would be part of the green business, the green buildings council of South Africa. And that's where we would engage with them. I, I mean it is a friendlier forum than going cold to the construction industry. Because they've already bought into the concept. But they would then play the pivotal role of leading from the front end of changing that construction industry. The conduction industry issues are very broad and we are you know interested in one sliver of it. So I wouldn't, I can't really see us engaging directly with any larger body in the construction industry."</i>	
T1_ST2_11	Senior Executive (N ^o 1), City of Cape Town

Additionally, according to a technical expert from the City, a climate change think tank that involved actors from various organizations, including City, academia, and provincial groups, as well as external NGOs, played an important role. The think tank produced a book, which compiled several important ideas that had been widely accepted and adopted since its publication (Cartwright et al, 2012).

<i>"But there was the climate change thinktank which ran I think from 2012 to 2016 or 2017, somewhere around there. Again there was also a book that was produced as part of that. That was also I wouldn't say committee, it was a group of various different organizations – City, academia, I think province might have even been involved. I think there was some external NGOs possibly involved in that. And that also, you know resulted in this resource of this book with a lot of important ideas that had been, I think quite mainstreamed since then."</i>	
T1_ST2_12	Mid-level Manager/Technical Expert, City of Cape Town

A senior executive from the City provides two concrete examples of cooperation between public and private sectors through the Chamber of Commerce and the Western Cape Property Developers Association.

<i>"I think one or two other examples are of course there are forums where government comes together, so you think of Chambers of Commerce or the Western Cape Property Developers Association are two good examples. You know those are run by themselves. But they obviously invite government to participate, share information and speak."</i>	
T1_ST2_13	Senior Executive (N ^o 2), City of Cape Town

Finally, a tangible example of private sector initiatives, was their response to the 2018 Day Zero water crisis, focusing on water efficiency. This included installing water tanks, boreholes, water efficiency taps, and greywater reuse systems in homes and local businesses. These private sector innovations had minimal direct intervention from the City, merely for licence and registering purposes, highlighting the City's enabling role in investment and innovation.

<i>"The private sector has a lot of it's own capabilities and is able to gather information to see gaps and all of that. Government of course more generally does provide the enabling environment for private sector, innovation and investment. But often that is more of a national level thing than a local level thing."</i>	
T1_ST2_14	Senior Executive (N ^o 2), City of Cape Town

<i>"We had limited control when push came to shove, nor did we want to be too heavy handed. But as you know, thousands and thousands and thousands of Capetonians, small-scaled investments into their own homes and businesses in order to improve their own localized water resilience against a potential day zero event. Whether that was water tanks or boreholes or energy efficiency taps, or in the larger areas like the Convention Center putting in desal [sp] or Old Mutual putting in particular dated water reuse. All of those were private sector innovations, private sector installed, and the City of Cape Town had very limited involvement. Maybe in a few licensing of the bigger things obviously your borehole is technically supposed to be registered, not that we have control over boreholes. And, it grew. I mean the private sector knew what to do quite frankly."</i>	
T1_ST2_15	Senior Executive (N ^o 2), City of Cape Town

The sub-theme Other Actors consists of seven codes derived from four interviews, with GreenCape and the Western Cape Economic Development Partnership (EDP) being entities that cut across both public and non-state groups (Figure N^o9).

<p>Sub-theme – Other Actors: GreenCape and Western Cape Economic Development Partnership (EDP).</p>

Figure N^o9. Sub-theme: Other Actors.

GreenCape is a sector development agency founded by the City government working to promote the growth of the green economy. It was created to strengthen relationships between the private sector and government, as the City cannot directly engage with private companies on procurement-related matters. For example, an interviewee mentioned the case of small-scale embedded generation (SSEG) in the city, where regulations regarding the allowed megawatts of installed capacity were changed. Through

collaboration with GreenCape, it became possible to revise this regulation to allow up to 120 MW, a significant increase from previous years.

<i>"The work that they're doing is in that space and the work they're doing with GreenCape as well. Which is a sector development agency working on a sort of, green economy type issues."</i>	
T1_ST3_01	Mid-level Manager/Technical Expert, International Network

<i>"And this is probably a good opportunity just to mention of course that one of the things that government does you know is that we built as government and created GreenCape as a off government books section 21 company which we funded in the provisional provincial government fund in order to prove improve the relationship between the private sector and the green space and government. So, because we can't, we can't have conversations up front with private sector around procurement."</i>	
T1_ST3_02	Senior Executive (N ^o 2), City of Cape Town

<i>"And then the other thing of course government does is it tries its best while balancing its own financial sustainability requirements, by pushing the boundary on certain regulatory things. Like for example iterative growth of small-scale embedded generation in the city. Cape Town has led the country on an I think there's well, I mean Leila will tell you there's well over 120 megawatts of installed capacity in the city now which never existed sort of five years ago. And wouldn't have happened without obviously the regulatory changes allowing for that. So, it's always important to know that private sector and government can't really talk very, very closely, because there are ethical reasons. But things like GreenCape help."</i>	
T1_ST3_03	Senior Executive (N ^o 2), City of Cape Town

A senior executive from GreenCape underscored the relevance of this NPC by highlighting the evolution of its funding dependency on the Western Cape and City governments, which has decreased from nearly 100% reliance to about one-third. The remaining two thirds now comes from other sources, such as national government departments and international development funding institutions (DFIs). The interviewee also noted that several years after its founding, GreenCape continues to maintain strong relationships with senior decision-makers in the Provincial and City governments.

<i>"So, in the early days, we were pretty much 100% reliant on the Western Cape government and city of Cape Town. And now, we probably get about a third of our income from the city and province and 2/3s from other sources. So other in this instance include some national government departments, international DFIs... yeah, so we've had, yeah pretty much you name them, and they would have funded some things. So, the British, the French, that Dutch, the Germans. New Zealand is the most recent."</i>	
T1_ST3_04	Senior Executive, GreenCape

<i>"So we were launched by Alan Winde who was at that stage the MEC, now the Premier. So that's 11 years of continuity. So your ability to build and maintain a relationship with the same head of department and economic development and the same team at the City roughly."</i>	
T1_ST3_05	Senior Executive, GreenCape

The Western Cape Economic Development Partnership (EDP), which focuses on the public and civic sectors, strives to foster partnerships between various government departments at both local and national scales. By assisting with complex problem solving, they have worked on the drought and water crisis management, the revitalization of the Central Business District (CBD), and the facilitation of adaptive leadership masterclasses. Additionally, they are involved in food systems change in collaboration with NGOs and community organizations. Climate considerations are integral to much of this work.

The respondent states that their primary goal is to enhance collaboration and partnership within government structures, fostering cooperation among provincial departments and facilitating connections across various levels, including provincial, local, and national entities. Their focus revolves around addressing complex problems and providing solutions, spanning issues such as drought, food systems, adaptive leadership, and the revitalization of the local Central Business District (CBD).	
T1_ST3_06	Operational Executive, Western Cape Economic Development Partnership (EDP)

The respondent reaffirms that their primary focus lies within the public sector, particularly in active engagement with the civic sector for humanitarian responses to COVID. EDP collaborates extensively with NGOs and community organizations, addressing aspects of food systems, resilience, urban agriculture, and considerations such as pricing of food and systemic change.	
T1_ST3_07	Operational Executive, Western Cape Economic Development Partnership (EDP)

5.2 Theme 2: Networks

The second theme includes 21 codes from six different interviewees, referring to the main networks undertaking bold climate action in the city of Cape Town. Depending on the scale at which these networks operate and the scope or purpose of their actions, this theme was divided into two sub-themes: *International Networks* and *Local Networks*.

The *International Networks* sub-theme comprises 17 codes sourced from four different interviews. The primary focus was on the influential C40 cities network, which the third respondent works for, who provided valuable insights based on insider knowledge. Before delving into the C40 context, the interviewees also offer a comprehensive overview of the various overseas networks shaping the urban landscape of Cape Town (Figure N°10).

Sub-theme – International Networks: Overview of relevant international networks and C40 cities.

Figure N°10. Sub-theme: International Networks.

As a City Councillor, one of the respondents commented on belonging as a member of international networks, first by acknowledging the importance of being part of such global communities. However, the respondent pointed out that budgets, research and government structures are often not comparable to those of other cities globally. This underscores the need to strike a balance between relying on local thinkers and innovators and depending on international communities, as the contexts and communities can differ significantly.

“I think it's important that we are part of the global community. Because obviously, there is still a lot to learn. But, I think it's also important that we try and understand our country and we find solutions that are going to be sustainable for us. So while we are part of the global community, we don't have the budgets that global cities have. We don't have the research and the understanding. We don't have, the way the government is structured in South Africa is not necessarily the way other governments are structured. So, one city can easily make a law and say this is what we're going to be doing from now on and it's accepted. But in South Africa, you need provincial government and national government to come together and legislate something. So you can't as the city of Cape Town say well from now on, we're just going to have electric cars everywhere. Where you going to get that money from in local government? So we need to first understand that we are structured

<i>a little bit differently and while it is encouraged that we are part of these global communities and networks, we need to rely on what it is that we can do and understanding the communities that we serve.”</i>	
T2_ST1_01	Political Representative, City of Cape Town
<i>“But you can see the interest is becoming less because people just want to have a tick box exercise and say OK I’ve done that, I’ve done that, oh well, my city is ready for investments. But there’s no political will to take climate change seriously unless somebody else on the outside does it first and then we’re going to copy.”</i>	
T2_ST1_02	Political Representative, City of Cape Town
<i>“But are we relying on ourselves as thinkers, innovators, global [flow?] makers? I would say no. And it’s sad. So, as much as I appreciate the valuable information that we get from international communities, we need to find our own solutions and have policies that our own communities are going to own.”</i>	
T2_ST1_03	Political Representative, City of Cape Town
<i>“Of course it is critical that the city of Cape Town is part of those global communities and networks. It’s critical. Because we get to learn. But it’s always a matter of a couple of officials going to Germany for a couple of days to really get exposed to the latest technologies that are available, and then they come back and then they submit a report. The report goes through the portfolio committee and then it goes through council and is adopted. Where is the community in that? So, it’s mainly for academics.”</i>	
T2_ST1_04	Political Representative, City of Cape Town
<i>“So we need to find a way of saying OK we are part of this international community where we have been paying - because it’s not free, that’s one thing that we should also really accept, that we have to pay fees every year.”</i>	
T2_ST1_05	Political Representative, City of Cape Town

Some of the global climate change movements for cities mentioned in the interviews were the Global Covenant of Mayors for Climate and Energy (GCoM), ICLEI – Local Government for Sustainability, and C40 Cities Climate Leadership Group.

<i>“Yeah, the ones that we have worked with very closely, so like GIZ, you know ones where they’ve got people very active on the ground and working in the space really see it, and value it, and sort of... and see the outcomes and yeah.”</i>	
T2_ST1_06	Senior Executive, Sustainable Energy Africa (SEA)
<i>“You know we almost needed to dive right deep into the city and, a lot of, even when I watch now the kind of global climate change movements for cities, you know there is the global covenant of mayors, and the C40 other two big ones and even ICLEI. They come at cities very much from outside cities actually.”</i>	
T2_ST1_07	Senior Executive, Sustainable Energy Africa (SEA)

As the C40 Cities network is composed of mayors from member cities, the organization is political in nature. Cities do not apply to become a C40 member but rather get selected and invited to join. The C40 executives are generally characterized as relatively young, highly qualified, and professional with an entrepreneurial profile. A mid-level manager from the City reported valuing the presence of a local C40 executive in the Sustainable Energy Markets Department, providing support and feedback.

<i>“And C40 is a network of mayors. So, it is a political organisation.”</i>	
T2_ST1_08	Mid-level Manager/Technical Expert, International Network

<i>"So, C40 membership is based on participation rather than applying to be a member. The C40, kind of, determines which cities it would like to be part of the network. They need to meet certain criteria. So, they firstly have to be a certain size. So, it wouldn't be relevant for smaller cities."</i>	
T2_ST1_09	Mid-level Manager/Technical Expert, International Network
<i>So even C40, which is very common you know it's membership based, well they all are, their executives are often sort of young, very well qualified you know professionals."</i>	
T2_ST1_10	Senior Executive, Sustainable Energy Africa (SEA)
<i>"And also to have that person embedded in the organization has been very beneficial, to not just like have a consultant coming in from outside and like sort of give you a report and then leave, but to have someone who's actually been able to kind of integrate with the department and be there to provide constant support and feedback first up and it's also a local person."</i>	
T2_ST1_11	Mid-level Manager/Technical Expert, City of Cape Town
<i>"In South Africa there is... and then there's Paul Jorgensen who is based in Joburg who's the head of climate action planning for Africa. So he is responsible for overseeing this work in all the cities. The climate action plan work specifically."</i>	
T2_ST1_12	Mid-level Manager/Technical Expert, International Network

Some respondents referred to C40 initiatives they had witnessed or heard about. For example, the South African Buildings Program (covered in depth in the following theme), supports implementation of the Climate Action Plan (CAP) by developing net zero carbon building bylaws in four South African metros, including Cape Town. In addition, the C40 finance facility initiative supports the preparation, feasibility, and funding of projects. Both the tools developed and the forums convened by the network were valued by a City respondent.

<i>"So the SA buildings program was one of C-40's programs that was aiming to fast-track implementation of the CAP. Especially looking at the carbon neutral goal and seeing well buildings are a key area that the city does have some control over, particularly new buildings because they oversee the development plan applications, but they are also responsible for approving zoning."</i>	
T2_ST1_13	Mid-level Manager/Technical Expert, International Network
<i>"recently, we've been working, it's a program forwarded through C40 which is the big global cities, well you would obviously know. And it's working with the four metros that are member cities to develop much, well net zero carbon building bylaws."</i>	
T2_ST1_14	Senior Executive, Sustainable Energy Africa (SEA)
<i>"So, you know with those four cities, they had signed an MOU with C40 and through that they were going to get the support. And then we were implementing partner. So we, we employed them. So the technical officers are legally employed by us, but seconded to the city."</i>	
T2_ST1_15	Senior Executive, Sustainable Energy Africa (SEA)
<i>"They're introducing new initiatives all the time. So, there are two examples. The one that has been around for a little while as the financing, the C-40 finance facility, it's part of the financing sustainable cities initiative. So there they're looking at you know helping with project preparation, and you know providing a little bit of money to, not for any of the infrastructure itself, but for moving projects closer to being bankable and fundable."</i>	
T2_ST1_16	Mid-level Manager/Technical Expert, International Network
<i>"And I think some of the tools that C40 has developed have been really useful. And some of the forums that that have been convened have been really useful for the city."</i>	
T2_ST1_17	Mid-level Manager/Technical Expert, International Network

The sub-theme of *Local Networks* is composed of four codes, obtained from four interviews. In the interviews, respondents only mentioned local networks in a superficial way, and they were not as widely present as international networks, so only brief mentions were provided in this sub-theme (Figure N°11).

Sub-theme – Local Networks: Overview of relevant local networks.

Figure N°11. Sub-theme: Local Networks.

While C40, at the international level, is acknowledged to have enabled a joint city view of the four metros, the South African Local Government Association (SALGA) and the South African Cities Network were referred to as some of the relevant networks operating within South Africa. However, a statement from an EDP executive downplays their importance, mentioning that Cape Town is not bound to the SA Cities Network. Something that emerged in the previous theme is the urgent need for a platform for public and private engagement, with academia, and with a focus on context-relevant innovation. In the present sub-theme, the same need surfaces, suggesting the value of strengthening local networks, enhancing interactions and collaborations.

<i>“C40 has definitely helped in trying to, sort of, bring a collective city view together. And working with other city entities like the South African Local Government Association or South African Cities Network or other agencies to try and help improve those alignments in a way.”</i>	
T2_ST2_01	Mid-level Manager/Technical Expert, International Network
<i>“And then you do that little piece and then there’s all sorts of amplifications through other organizations, through linking into SALGA. So, the kind of, yeah, the ability to work very small and then amplify it through kind of networks.”</i>	
T2_ST2_02	Senior Executive, Sustainable Energy Africa (SEA)
The EDP respondent indicates that the initiative is primarily driven by the City. While they have a C40 team member in the SEM Department providing advice and participating in workshops, the City’s connections are mostly limited to specific agreements, such as the relationship with the City of Aachen in Germany. There is not a significant association with the SA Cities Network. The focus remains largely internal, directed at City departments. Given the challenges in garnering support within the City, the respondent indicated that not much energy has been invested in establishing relationships beyond the internal structures.	
T2_ST2_03	Operational Executive, Western Cape Economic Development Partnership (EDP)
<i>“I do think that there should be a platform, particularly around innovation, so for example the University of the Western Cape is doing work around batteries and it’s an important area for our work. And we would like to have more engagement with the universities who are doing research on innovative aspects for you know new energy future in South Africa.”</i>	
T2_ST2_04	Senior Executive (N°1), City of Cape Town

5.3 Theme 3: Plans, Programmes, Policies and Strategies

After analysing 12 codes from four different interviewees, the third theme stands for the plans, programs, policies and strategies held in the city of Cape Town, most of which were ongoing during the interview process, or in which the respondents were involved. These correspond with the Climate Action Plan (CAP), the South African Building Programme, the Climate Change Policy, and its consequently Climate Change

Strategy. Since only a few codes were identified for each of them, this theme does not have sub-themes and is presented as a standalone theme (Figure N°12).

<p><u>Standalone Theme – Plans, Programmes, Policies and Strategies</u>: Climate Action Plan, South African Building Programme, Climate Change Policy and Climate Change Strategy.</p>
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Figure N°12. Theme: Plans, programmes, policies and strategies.

The most relevant plan referred to in the interview process was the Climate Action Plan, which is expected to address the primary needs at present. The listed actions not only tackle each of the priority climate issues, but also enrol both citizens and businesses into the process. This plan was a commitment within the C40 Deadline 2020 program, expected to be released by the end of 2020. However, due to the COVID-19 pandemic, the release was delayed and it was finally launched in October 2021.

<p><i>“One of the things that we're going to be doing early next year in the city is to look at the climate action plan, and there's a whole list of actions, and to see well how can we really tackle like the city's sort of primary needs at the moment through the action plan. And that's not just in the actions themselves, like what they are, you know, if it's building efficiency or small-scale embedded generation, but really the how. How does one engage you know citizens and businesses around this issue?”</i></p>	
T3_01	Mid-level Manager/Technical Expert, International Network

<p><i>“And at the same time as part of the city's participation in C-40 program, and our commitments under a program that's called Deadline 2020 which is in C-40, we committed to having a climate change action plan. It was originally for the end of 2020, but due to pandemic circumstances that we're currently in, the process has been extended until the middle of next year.”</i></p>	
T3_02	Mid-level Manager/Technical Expert, City of Cape Town

As mentioned in the previous theme, the South African Building Program is being advanced through C40, aiming to implement net-zero carbon bylaws in the four network-member metros (Cape Town, Johannesburg, Durban, and Tshwane), pushing for changes in the building sector. The goal is to ensure that, by 2030, new buildings meet carbon neutrality and energy efficiency standards, as well as utilize renewable energy. The bylaws will set new conditions for development plan applications and zoning approvals. It is believed that the program could serve as a role model for other African cities.

<p><i>“And then interestingly now, recently, we've been working, it's a program forwarded through C40 which is the big global cities, well you would obviously know. And it's working with the four metros that are member cities to develop much, well net zero carbon building bylaws. So it's the first kind of taking an element of the city's climate action plans and really trying to push for scale change, you know no longer just pilots or... this is like really trying to again it's not just the solar water heater bylaw, but trying to get all new buildings from 2030 have to be net zero carbon, so very energy efficient, and meeting with renewable energy. So you know really, it really speaks to a sector level change because it will very much change how local government structures.”</i></p>	
T3_03	Senior Executive, Sustainable Energy Africa (SEA)

<p><i>“So the SA buildings program was one of C-40's programs that was aiming to fast-track implementation of the CAP. Especially looking at the carbon neutral goal and seeing well buildings are a key area that the city does have some control over, particularly new buildings because they oversee the development plan applications, but they are also responsible for approving zoning.”</i></p>	
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T3_04	Mid-level Manager/Technical Expert, International Network
<i>"I think the idea of the SA buildings program was that it would be used as a learning opportunity you know to gain information about how this could work in other places, especially on the continent."</i>	
T3_05	Mid-level Manager/Technical Expert, International Network

Regarding policies in the City, it was noted that the 2017 climate policy needed an update, but once it was approved in 2019, the policy committee suggested upgrading it to a climate change strategy instead. This was mainly because policies focus on very specific issues, while strategies address larger issues such as climate change, the environment, and the economy. Furthermore, strategies are more change-oriented and a more actionable document than policies. The updating process was carried out simultaneously with the development of the CAP, to ensure complementarity. The process also involved cross-departmental collaboration, as adaptation and mitigation are addressed by different City departments. These two concepts and agendas – adaptation and mitigation – are key commitments for aligning the climate strategy with the 2020 Deadline program.

<i>"So, in the middle of 2019, we started a review process and the review, the outcome of their review was at the policy needed to be updated, but when that went to the city's policy coordinating committee, they agreed with that, they also suggested that it should become a climate change strategy rather than a policy. So in the city of Cape Town, strategies like a higher level from a policy. So policies are to deal with very specific, quite narrowly focused issues, and strategies are to deal with much higher level broader issues like climate change or the environment or the economy."</i>	
T3_06	Mid-level Manager/Technical Expert, City of Cape Town

<i>"So, at the same time as doing the review and rewriting a new environmental strategy, sorry I keep saying environmental strategy, climate change strategy, it's been a process that's involved two departments currently. The sort of adaptations function and mitigation function are spread across two different departments. But obviously the strategy and the actual [action?] planning needed to address both of those aspects. So, it's been a process of working across departmental structures to draft and do the consultation processes."</i>	
T3_07	Mid-level Manager/Technical Expert, City of Cape Town

<i>"Because a policy on its own we understand that it's not going to help drive about change. So we need to turn our climate change policy into a more actionable document."</i>	
T3_08	Political Representative, City of Cape Town

<i>"So as the City of Cape Town, we are working on updating our climate change policy, we are also trying to make sure that we finally release our climate change strategy and complement that with the climate change action plan."</i>	
T3_09	Political Representative, City of Cape Town

<i>"And then, since then we've, kind of, been working on the action plan. But then, same time policy unit had decided that the city actually needed to upgrade the climate change policy which was a 2017 policy into a strategy. Because there were some problems with the policy. And also, just to make the strategy more aligned with these new commitments that had been made in terms of the Deadline 2020 program."</i>	
T3_10	Mid-level Manager/Technical Expert, International Network

The public comment process for the climate strategy involved the participation of the City Councillors and the public. Due to pandemic circumstances, online open workshops served as the primary participation mechanism, allowing participants to provide feedback through comments and questions.

<i>“So it was an open workshop, again online, any councilor could come and ask questions, there was a presentation and you know questions of clarity or final inputs. So that was kind of the last opportunity.”</i>	
T3_11	Mid-level Manager/Technical Expert, City of Cape Town

<i>“it was just to councilors. And between all of that, as part of the public comment process, we had an online public meeting in the middle of October. So that was the opportunity for public comments and for, I mean the whole obviously the whole process was public comments but that was the opportunity for kind of in person public comment, questions and Q&A's type of session. And that was I think quite well attended as well, considering the circumstances.”</i>	
T3_12	Mid-level Manager/Technical Expert, City of Cape Town

5.4 Theme 4: Constraints

The fourth theme in the study includes 21 codes from six interviews and is closely connected to the second research question about the institutional barriers to leadership in attaining climate objectives in the city of Cape Town. This theme identifies various constraints and is categorized into three sub-themes: Political and Institutional Constraints, Financial Constraints, and Other Constraints.

The sub-theme *Political and Institutional Constraints* consists of 11 codes obtained from five different interviews as sources. Among the chosen codes, political will, legislative blockages, and problems with institutional structure, stands as the most mentioned constraints in the present sub-theme (Figure N^o13).

<p><u>Sub-theme – Political and Institutional Constraints: Political will, Legislative blockages, and Institutional structure issues.</u></p>

Figure N^o13. Sub-theme: Political and Institutional Constraints.

In order to successfully enable work around green innovation, political commitment and investment are highly necessary. The executive from EDP stated that no major commitments have been given from the political side. Similar opinions from the City Councillor suggest that although many politicians agree and support the work towards climate action, some are reluctant to continue pushing forward. They believe that they should prioritize supporting their families.

The EDP respondent suggested that two essential factors are required. Firstly, there needs to be political will concerning green technology and its associated aspects. Secondly, it is crucial to address legislative blockages. While officials may agree in principle with necessary actions, they often encounter legislative barriers that hinder progress. Overcoming these legal obstacles is vital for advancing initiatives effectively.	
T4_ST1_01	Operational Executive, Western Cape Economic Development Partnership (EDP)

The respondent states that green initiatives that come with substantial investments are generally viewed positively. However, outside of significant investments, despite the positive rhetoric in documents, there appears to be a gap in translating words into action. While the respondent did not want to sound overly negative, it seemed to them challenging to discern the necessary commitment to bring about a substantial transformation and achieve carbon neutrality by 2050. This objective, the respondent expressed, does not seem to be accorded the priority status required to make it a reality.	
T4_ST1_02	Operational Executive, Western Cape Economic Development Partnership (EDP)

<i>"I am grateful that we are actually the majority governments at the City of Cape Town and we have a mayor and the leadership that understands the importance of climate change. That's one thing. But then when it comes to council, I don't want to sound pessimistic or anything, especially from an outsider looking in. But last year in one of our council sittings, we had a councillor who said that climate change is a hoax and people should just continue with their lives and worry about being safe and having enough money to feed their families. So, still for many politicians, what they want to talk about and engage on is can I provide houses, can I provide jobs or can I make my residents feel safe."</i>	
T4_ST1_03	Political Representative, City of Cape Town

Another issue that needs to be addressed to undertake widespread climate action in Cape Town is unlocking the legislative blockages that officials face when making city commitments, which obstructs progress. According to the international network manager respondent, there is a spectrum of views regarding the work of City officials and their ability to take on commitments. Some support it, but there is often pushback due to the limited legislative or regulatory power that the City possesses. Resistance to new urban policies can come from those who approve development applications, as they view their role to be simply implementing national regulations, which can make it difficult to introduce more stringent environmental standards. The City councillor respondent added that creating new policies is not enough to protect the environment; provincial and national governments must work together to establish laws that prevent those who disregard environmental concerns from obtaining licenses to trade.

<i>"There's a spectrum of views and then there's also quite a lot of support for the work but then sometimes City officials don't feel it's the mandate to take on these, kinds of, commitments because the city only has limited, sort of, legislative power over certain things or regulatory power. So, I think there's always going to be a bit of pushback."</i>	
T4_ST1_04	Mid-level Manager/Technical Expert, International Network

<i>"So the idea of climate change and the things and the commitments that people have to make in order for us to actually achieve the goals that we have set out to achieve it's not backed up by legislation which is another critical thing."</i>	
T4_ST1_05	Political Representative, City of Cape Town

<i>"You can make all the policies that you want, but until the provincial government and national government can sit together and say listen, we're going to start or we're going to draw up a law that prevents certain people who do not care about environment to get licenses in order to be able to trade whatever they would like to trade."</i>	
T4_ST1_06	Political Representative, City of Cape Town

<i>"I think the resistance is always about, "What's my traditional role in the city?" And the classic example has been the people who approve the development applications, the development planning people. When I come into the city, I thought, "Well, it's their job to ensure carbon neutrality if we committed to carbon neutrality or net zero carbon buildings." But I learnt that actually that's not really what they're legislated to do. They don't make up the regulations the national government does. And so, they've always seen themselves as implementing agents. And implementing those national regulations is tough already."</i>	
T4_ST1_07	Mid-level Manager/Technical Expert, International Network

Institutional constraints are mainly represented by the lack of a clear institutional governance structure for climate change work. Adaptation is handled by one department, mitigation by another, and resilience by yet another. The EDP respondent expressed their belief that when departments work in silos and prioritize their own goals over city-wide objectives, it becomes difficult to ensure that commitments are distributed across the organization. Another example is the Energy and Climate Change Portfolio

Committee, a reporting body for climate change work where there has been some confusion over roles, which in turn confuses departments that are not directly involved in the work. The executive respondent from City added that many projects and programmes will require collaboration between multiple departments, as few can be solely handled by one department. The respondent mentioned the possibility of creating an interdepartmental work group to facilitate cooperation between different departments in order to overcome such constrains.

The respondent clarified that their comments were not intended to reflect negatively on the City's commitment. However, they believe that the challenge lies in the fragmented approach where initiatives are compartmentalized into projects and confined within silos. The hierarchical and compliance-driven nature of the City institution contributes to this issue. The commitments seem to be concentrated within individual departments, each prioritizing its own agenda rather than aligning with broader priorities.	
T4_ST1_08	Operational Executive, Western Cape Economic Development Partnership (EDP)

<i>"The institutional issues have been an ongoing, sort of, challenge that we're still grappling with to be honest. And they have... I think it's one of the things that's really been problematic in the process is not having a sort of, clear... I'd say... institutional governance structure for the climate change work. The adaptation work happening in a different department to mitigation and then resilience in another department."</i>	
T4_ST1_09	Mid-level Manager/Technical Expert, International Network

<i>"So, there are portfolio committees of political committees like the Energy and Climate Change Portfolio Committee. Which is a reporting, sort of, body. So, all the work gets reported through that that committee. But I can say it's also not that clear cut like, "All the climate change work happens in this department or that department." There has been some confusion which also then confuses departments who are not directly involved in the work"</i>	
T4_ST1_10	Mid-level Manager/Technical Expert, International Network

<i>"I think also you know, within the City there's going to be a lot of collaboration as required for implementation of projects and programs because there's very few that have been identified in the action plan that are solely the responsibility of one department to do. So almost everything, not completely, but almost everything is the responsibility of multiple different departments that need to work together to produce a program or a piece of work. And so, I don't think there's one solution to that. In some cases, we're looking at creating a sort of interdepartmental transversal work group of some kind."</i>	
T4_ST1_11	Mid-level Manager/Technical Expert, City of Cape Town

The *Financial Constraints* sub-theme consists of four codes derived from three interviews. Based on the selected excerpts below, it appears that budget constraints are a major concern for both internal and external City respondents (Figure N^o14).

Sub-theme – Financial Constraints: Budgetary issues.

Figure N^o14. Sub-theme: Financial Constrains.

Regarding financial issues, the respondent from EDP expresses concern about budget constraints as the work of such organizations to support the government with public funds remains in jeopardy. Within the City, a senior executive displays a reluctant attitude when facing the Chief Financial Officer (CFO), who takes a pragmatic stance on all matters related to green credentials. The core argument is essentially the

need for certainty regarding the costs involved in proposed pilot projects, such that initiatives involving green innovations are not considered to be a priority.

The EDP respondent explained that their funding model relies on receiving financial support from the government to aid governmental initiatives. If this funding is sustained, EDP can effectively carry out its work. However, the challenge arises in times of budget cuts, as organizations like theirs face potential threats due to the financial constraints imposed.	
T4_ST2_01	Operational Executive, Western Cape Economic Development Partnership (EDP)

<i>“With COVID now, the budget has been severely impacted and we have to reduce our ambitions to a certain extent. Our CFO is not really interested if there is green credentials. He wants to know the Rands and cents at the end of the day. So we won't be able to convince him to put it in for the greater good of the world, you know. We would need to show a business case before we could proceed. As I said, with small businesses, with big businesses, there is a financial case in most cases and they are happy to proceed with SSEG installations. And then households, the case is not always clear.”</i>	
T4_ST2_02	Senior Executive (N ^o 1), City of Cape Town

<i>“Where we are most constrained is in the municipal finance management act. So to have a pot of money to do innovative, whether it's workshops or booklets or actual projects that is what is required. To spend public money on pilot projects or what might be seen as not basic or necessary services is always a challenge.”</i>	
T4_ST2_03	Senior Executive (N ^o 1), City of Cape Town

<i>“So those are the conversations that we need to have as politicians and take the politics out of it. but there's lots of blockages in the budget and everything else. So it gets a little bit difficult.”</i>	
T4_ST2_04	Political Representative, City of Cape Town

The sub-theme *Other Constraints* consists of six codes from five interviews and reveals two additional identified constraints related to hierarchical positions within the City and the communication struggles that officials face when trying to convey the concept of climate change to the public (Figure N^o15).

Sub-theme – Other Constraints: Hierarchy and Communicational issues.

Figure N^o15. Sub-theme: Other Constraints.

Regarding hierarchical constraints, some respondents reported certain attitudes from older and/or senior people working in the City, who often do things their own way or evade responsibilities they consider outside their duty. A challenge facing officials is getting entire teams and their leaders to attend adaptive training. Without the mandate from leadership, implementing the necessary changes in a hierarchical institutional setup becomes impossible. It is also common for senior staff to be so overwhelmed by their responsibilities that they cannot attend to anything other than their immediate mandates. A City senior official also noted the challenges of navigating through interpersonal relationships within an established organization. Pre-existing cliques and alliances can make it difficult to understand or permeate established social networks, suggesting that it may require significant effort and patience to navigate these networks successfully.

“and a lot of the people in the cities were quite new sometimes, and some more old. And both of those were difficult. So you know the old people had been doing things in certain ways and they would say, but that's not

<i>our mandate, you know we are not responsible for that. You know a real culture of if it's not my mandate, I don't do it."</i>	
T4_ST3_01	Senior Executive, Sustainable Energy Africa (SEA)

The respondent indicated that in many cases, heads of departments might delegate individuals to attend adaptive training sessions without considering the necessity of training the entire team. Training only one person becomes ineffective when they return to a highly hierarchical, compliance-driven, and siloed environment, making it challenging to implement the acquired concepts and behaviours. This poses a significant challenge for officials. To address this, EDP encourages the involvement of more senior officials and advocates for the participation of entire teams, including leaders. The respondent noted that leadership engagement is crucial, as within such a hierarchical institutional setup, meaningful progress is only possible when mandated by senior leaders.	
T4_ST3_02	Operational Executive, Western Cape Economic Development Partnership (EDP)

Returning to the question about seniors being hesitant to engage, the respondent observed that their reluctance seems to stem from being overwhelmed by their workload. The pressure to meet compliance requirements and fulfil immediate mandated tasks takes precedence for them, often leaving little room to take on any additional responsibilities or opportunities.	
T4_ST3_03	Operational Executive, Western Cape Economic Development Partnership (EDP)

<i>"So those interpersonal ones, there are challenges because with an organization as old as this is, you know there are already cliques and allies and it can be difficult to traipse through that."</i>	
T4_ST3_04	Senior Executive (N ^o 1), City of Cape Town

Regarding the conceptualization of climate change, people who are not particularly familiar with the topic pose a major challenge for some of the interviewees, as they struggle to communicate its effects in the foreseeable future. People seem to be more concerned about immediate problems such as jobs and food, making it difficult for politicians and City officers to link climate change and renewable energy topics with many residents' daily lives.

<i>"I think the concept of climate change is far from where they are. People are very worried about jobs and worried about where the next plates of food was going to come from, and where we could link climate change and renewable energy to their everyday lives, that's where it was easier to communicate."</i>	
T4_ST3_05	Mid-level Manager/Technical Expert, City of Cape Town

<i>"I think one of the biggest challenges is that you cannot take climate change and put it on the table and say here it is, right. You can't do that. It is something that is coming and it's coming slowly and the effects are not as drastic as some people are would like them to be to be able to actually take note. So that's challenge number one, even for councillors. They want to talk about climate change. But then what's the worst thing that's going to happen? It could be 30 years, 40 years. People are... it's difficult for people to relate to something that is not currently happening and a direct threat to their lives at the moment."</i>	
T4_S'3_06	Political Representative, City of Cape Town

5.5 Theme 5: Co-creational Leadership Strategies

The fifth theme, which is one of the most relevant for the scope of this study, contains a total of 38 codes retrieved from all interviews. It is tightly linked to the second research question on the leadership strategies employed for climate transition in Cape Town. After conducting the interview analysis through thematic analysis, four leadership strategies were identified as sub-themes: *Ideational Leadership*, *Integrative Leadership*, *Adaptive Leadership*, and *Distributed Leadership*.

The *Ideational Leadership* sub-theme comprises 18 codes from five interviews. Respondents identified some of the key traits of this leadership style, which are characterized by a collaborative design spirit among a sympathetic group of actors within a polycentric governance logic. By employing inspirational motivation, leaders also develop actionable ideas that appeal to a wider range of stakeholders with varying interests, with a particular focus on designing policies (Figure N^o16). The traits mentioned above are supported by the following excerpts:

Sub-theme – Ideational Leadership: Identified traits and examples.

Figure N^o16. Sub-theme: Ideational Leadership.

A mechanism for creating space to build relationships between stakeholders working towards a green shift is portrayed by EDP workshops, which aim to bring people together from diverse backgrounds. As an intermediary organization between government and civil society, EDP works to break down the siloed environment and enable participants to share information and learn from one another. This approach enabled NGOs to gain a deeper understanding of how government functions, while City officers gained a better understanding of and appreciation for the impactful work that NGOs have been doing with local communities. Furthermore, the EDP respondent suggested that the City should maintain those relationships to avoid participants feeling “disposable”.

The EDP respondent suggested that a key focus of the work is to create a space where individuals can come together outside of their respective silos, fostering collaboration, information-sharing, and mutual learning.	
T5_ST1_01	Operational Executive, Western Cape Economic Development Partnership (EDP)

The respondent explained that as an intermediary organization, EDP's role was to bring people together, rather than act as food experts. Despite not specializing in food, EDP conducted a survey at the end of the first phase. Feedback from most NGOs indicated an improved understanding of how government operates and the constraints it faces. The respondent also noted that through EDP efforts, NGOs formed connections with one another that did not exist before. The work and impact of non-profits became more visible, addressing a common challenge that many government officials were not fully aware of on-the-ground realities. They noted that government departments adjusted their ways of working based on this new information.	
T5_ST1_02	Operational Executive, Western Cape Economic Development Partnership (EDP)

The respondent explained that while concluding the first phase of the food forum, EDP emphasized the importance of maintaining relationships with government, particularly avoiding the tendency to exploit the collaboration only during crises and then discontinuing it when deemed no longer needed. They advocated for the continuation of these relationships, emphasizing ongoing support and information sharing. As a	
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result, they have established a subsequent phase of the forum specifically designed to sustain and foster these relationships over time.	
T5_ST1_03	Operational Executive, Western Cape Economic Development Partnership (EDP)

EDP conducts masterclasses to simulate real-world collaborative environments, where participants learn that collaboration leads to better results. The organization also employs the "grand narrative matrix" to illustrate how different departments can support one another in achieving their goals. However, individuals struggle to look beyond their own project plans and recognize the importance of collaboration across departments. One example is a workshop involving the SEM department, where facilitators from EDP worked closely with the SEM team to ensure their involvement and relationship building after the workshop. During the workshop, a member of the SEM team became upset and left the room, but the EDP facilitators were better equipped to handle the situation and maintain the workshop's flow.

The respondent stated that the masterclass provides insights into the the necessity of adaptive management, helping participants understand its characteristics and the associated behaviours. In collaboration with LEGO, participants were presented with challenges designed to foster teamwork and cooperation. The simulation component focused on creating an environment where collaboration was essential. By observing their interactions, participants had the realization that effective collaboration could lead to improved results, facilitating a valuable learning experience.	
T5_ST3_04	Operational Executive, Western Cape Economic Development Partnership (EDP)

The respondent indicated that employing the grand narrative matrix, EDP aimed to illustrate the interconnections between various departments. EDP highlighted instances where one department's actions, such as in transportation, could have implications for another department, like housing, and showcase opportunities for mutual support. However, the respondent reflected that it proved challenging to encourage officials to look beyond their individual project plans and consider broader collaborative possibilities.	
T5_ST3_05	Operational Executive, Western Cape Economic Development Partnership (EDP)

The respondent explained that in preparation for the workshop, EDP held several meetings with the SEM team to discuss the content and the roles they would undertake during the session. EDP's approach was to empower the SEM team to take on as much responsibility as possible since they would continue nurturing the relationships. While EDP's goal was for the team to take the lead, they were ready to assist, especially in unexpected situations like when a team member suddenly left. In such cases, it was more practical for EDP to handle that facilitation than members of the internal team.	
T5_ST3_06	Operational Executive, Western Cape Economic Development Partnership (EDP)

From the City's perspective, ideational leadership strategies identified were the recognition that they cannot be experts in every topic at once and should act as space facilitators instead. As they have a holistic or multidisciplinary view, they can accommodate multiple views and emphasize the importance each one has. The international network manager respondent expressed that the City should create an enabling environment and step aside from "running the show", empowering others to take the lead in various aspects of the green transition.

<i>"Where you can build the bridges. But still be quite committed to ambitious urban transformation inside all of that. And I think. While we can't be experts in transport, waste, and energy all at the same time, we can still be the one looking at the sort of... The umbrella view or at the sort of, holistic level saying, "How do all of these things fit together and why are they all important?"</i>	
T5_ST1_07	Mid-level Manager/Technical Expert, International Network

<i>"this is just a reflection, you know, personally and having spoken to others who have an outside view of the City, is the City could be a lot better at not always running the show, and rather letting others lead, and creating an enabling environment for others to step into the space of leading transition. And I think that's sort of my view of where the work should be going and what C-40 he could also do to try and you know push that forward. So, while vertical integration is important, I think that creating an enabling environment is very important."</i>	
T5_ST1_08	Mid-level Manager/Technical Expert, International Network

<i>"I mean we used some of those online polling things just to kind of create a little bit of liveliness in the workshop so to get people to submit ideas anonymously well I think was quite nice. It gave people the opportunity to maybe say things that they wouldn't have felt comfortable getting up in a meeting and saying."</i>	
T5_ST1_09	Mid-level Manager/Technical Expert, International Network

<i>"So MISTRA urban futures, with the climate change think tank. So I can go through some of those things if I need to explain those more. That has really informed I think a lot of the thinking around the strategy and action plan of how we think about the issue in Cape Town. So, again I can't point to say like you know this specific action came from this specific process. But it really has been shaped by this long history of I guess you would call it co-creation of previous policy, of you know involvement in these partnership projects and programs."</i>	
T5_ST1_10	Mid-level Manager/Technical Expert, International Network

<i>"I don't know if it's a strategy, but to kind of make sure that what we're doing is grounded in reality is very important. There's no point in having a strategy or an action plan that is unachievable and unimplementable."</i>	
T5_ST1_11	Mid-level Manager/Technical Expert, International Network

The international network respondent suggested that the City and academia are broadly aligned in terms of levels of ambition, while on the other hand, some differences with the more activist community have been recognized. The latter is due to the nature of those sectors, which push to get things done immediately and make strong commitments, as well as having few opportunities for engagement with advocacy networks. Nevertheless, the relationship between the City and NGOs has been maturing, and there is willingness to co-create at the project level.

<i>"So, yeah I do think there is also just sometimes you know, I think our working relationship with the academic sector, correct me if I'm wrong Anna, but I think it's generally mostly on the same page about levels of ambition, what is feasible, where focus needs to be. I don't think we have massively differing opinions, I might be wrong. I think the gap sometimes comes with a more activist community where there is a strong push to get things done immediately or to make very strong commitments that people aren't comfortable with and that can be a bit more difficult because there's also less of an opportunity to engage with that sector."</i>	
T5_ST1_12	Mid-level Manager/Technical Expert, International Network

<i>"I think we've established kind of a mature relationship with these kinds of existing established kind of NGO bodies. And also, there's I think a lot of willingness within those kinds of organizations to work together on project related things. So I think that's also where there's a lot more opportunity for kind of co-creation or co-operation is at the project level."</i>	
T5_ST1_13	Mid-level Manager/Technical Expert, International Network

Regarding mechanisms for citizen involvement in decision-making, a senior executive from the City outlined three more approaches - formal participation, co-designs, and partnering - that can be employed to increase citizen engagement.

<i>"Formal participation like these bylaws coming out, that's one. Two is co-designs pragmatic problem solving, and that is another kind of bucket in my mind. And the third one is an interesting one because it is about</i>	
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<i>partnering, and those partnering is kind of common to settle partnering and there are two very good examples of that. It's around public communication."</i>	
T5_ST1_14	Senior Executive (N ^o 2), City of Cape Town

GreenCape adopts a strategic approach, focusing on comprehending opportunities rather than engaging in arguments with stakeholders. Their dual emphasis on economic development and job creation remains pivotal, aligning with their commitment to the green economy. To maintain coherence with their initial objectives, GreenCape emphasizes the importance of making robust decisions that withstand challenges, so that they do not go off track from their original goals.

<i>"So the first we put a bit of effort into understanding the opportunity itself. So it means that by the time you are starting get to the resistance, the team is sufficiently convinced that we've understood this properly and that we're not just getting into an argument for the sake of getting into an argument and you're not trying to use green as the motivation. We'll use economic development and economic opportunity as the motivation with job creation. And we will also be in a green economy, but how you construct the motivation for what you're trying to achieve, that decision making up front has to be robust, and that means there's a lot of times where people come up but say oh GreenCape should be doing ABC, and we say no, we're not going to do that."</i>	
T5_ST1_15	Senior Executive, GreenCape

In pursuit of overcoming misconceptions about climate change and enhancing resilience among the people of Cape Town, the City's Sustainable Energy Markets Department has been developing a strategy to shift residents' opinion on these topics and thereby shift their behaviours towards low carbon and climate resilient options. City staff are aware that residents are often frustrated with and reluctant to engage with and take information from government officials and politicians. People are more likely to take on new information and new perspectives by engaging with local, community-based leaders, who they have a longstanding relationship with and who they trust.

<i>"What we have been trying to do, from the department is to first get people to understand that climate change is not other people's problems. It is everyone's problem. And the way we are doing that, we have understood from doing little groupings of people and asking them what they think of climate change. And from those studies we have found out that people do not really like to hear messages from the government about climate change or how they should change their lives and how they should be more resilient. They rather hear that message from a community leader for example or from a church leader or from an NGO that has been working in the community for some time."</i>	
T5_ST1_16	Political Representative, City of Cape Town

<i>"Because people are free as well when there is no official standing there or a political head standing there. Because people don't respond well to authority, especially the poorer communities. It's either they're angry and they want to find out why it is that they haven't received a house yet or why is the price of electricity so high. And they won't engage with you."</i>	
T5_ST1_17	Political Representative, City of Cape Town

Ultimately, according to the international network respondent, when making progress on a project, it is crucial for someone to establish an ambitious goal and commit to it. This person may hold a leadership position, but it is not a requirement for their involvement to be advantageous.

<i>"I think, if someone doesn't put a stake in the ground for something then you won't move anywhere. I don't think it, necessarily, has to be from the top. But it definitely helps if there is some kind of support for ambitious action."</i>	
T5_ST1_18	Mid-level Manager/Technical Expert, International Network

The *Integrative Leadership* sub-theme consists of eight codes from three interviews. It is characterized by the co-design of climate policies and institutional change, ensuring the integration of mutually dependent governmental actors as core stakeholders. Under a multilevel governance system, this type of leadership aligns actors with mutual interests, especially on institutional intentions and barriers. The following quotes gives evidence of some integrative traits (Figure N^o17):

Sub-theme – Integrative Leadership: Identified traits.

Figure N^o17. Sub-theme: Integrative Leadership.

The international network respondent, who was embedded in the City, provided evidence of integrative leadership when describing their own role, such as working with a team to draft the Climate Action Plan, contributing to the overall Climate Change strategy, and engaging with stakeholders to try and build coherence and share commitment. Playing a coordinating and facilitating role between different C40 teams and departments within the City also reveals integrative leadership traits. Promoting ambitious goals both at local and national levels, without being seen as acting independently or unilaterally, remains a challenge for the City. In this regard, the C40 Cities network has been helpful in bringing together a collective view from cities, working with other city entities and agencies to improve alignment and collaboration. As an example, it highlights the success of a real collaboration between the environmental management and energy teams, where they have been working tightly in the climate change strategy and in public engagements as well.

<i>"At least, half of the time there's also been just working in a team, draughting the Climate Action Plan, making contributions to the strategy and participating in stakeholder engagement processes and doing a little bit of the coordination and a little bit of facilitating interaction between some of the other C40 teams and different departments within the City."</i>	
T5_ST2_01	Mid-level Manager/Technical Expert, International Network

<i>"So, we had to, sort of, think, "Well, how can we...?" And same with provincial governments, actually. How do we, sort of, push ambition at the national level as well without... What Cape Town's been accused of is, sort of, going it alone or being a lone ranger. And so, C40 has definitely helped in trying to, sort of, bring a collective city view together. And working with other city entities like the South African Local Government Association or South African Cities Network or other agencies to try and help improve those alignments in a way."</i>	
T5_ST2_02	Mid-level Manager/Technical Expert, International Network

<i>"I think another good example to share... is the extent to which the environmental management people and the energy people who are working on climate change have managed to collaborate in recent times, especially on the climate change strategy and on the public engagements we've had on that and also in the political engagements. For me, it was very powerful how well those engagements went and how it was a real collaboration between those departments."</i>	
T5_ST2_03	Mid-level Manager/Technical Expert, International Network

The technical expert respondent from the City raised the importance of clear deadlines when working on a lengthy process, such as the drafting of the climate strategy. By emphasising the need for a clear timeline for public engagement and internal comments, it ensures the process remains focused and productive, avoiding dragging on indefinitely. The respondent added the example of a collaborative effort within the City, where the hazard vulnerability risk assessment project consisted in the collaboration of representatives from various departments that might play a role in adaptation. This group met several times throughout the process, indicating a co-creative process within the City.

<i>“but I think having clear deadlines is always a useful thing to have. So say the public process is running from this day to this day, and that's it. We can't keep coming back and coming back and coming back into the process, because it will take us like the next 10 years to you know draft the strategy. It's already taken over a year. So it's a very lengthy process. So, having a sort of clear yeah, deadline dates beyond which unfortunately we can't consider anything else I think is one tool and at that goes for internal comments as well.”</i>	
T5_ST2_04	Mid-level Manager/Technical Expert, City of Cape Town

<i>“So the most recent piece of work was in 2019 the hazard vulnerability risk assessment that was carried out in the heart of the city funded management bank, and was carried out by a local consultancy called One World who does various climate change and environmental related consulting work. That was a very internally co-creative process within the City. So we had a reference group of representatives who were all from all the various departments that might play a role in adaptation, which met several times throughout the process.”</i>	
T5_ST2_05	Mid-level Manager/Technical Expert, City of Cape Town

The SEA respondent suggested that having a strong technical background can be beneficial in a certain field or industry, also mentioning the value of having an intermediary role to navigate through bureaucratic challenges in a city or organization. This intermediary role can be useful in quickly transferring information and avoiding bureaucratic obstacles. The SEA team consists of members with varying technical skills, ranging from engineering and modelling to translating complex concepts for decision makers or the general public. This diversity of skills enables the team to effectively communicate technical information to different audiences and ensures that both the technical and practical aspects of a project are well understood across different domains. For example, the organization deployed a technical support person to each of the four cities, and they were managed by a line manager. They also provided data, a template bylaw, and systems management to help with the changes, as well as linking into the national government department for relevance.

<i>“Yeah, so I think definitely the, having like a fairly high-level technical skill to offer into the space gives quite a bit of traction. And having as you said that intermediary ability to make the, you know cities are very often hampered by bureaucracy and you know, someone can phone me and say what is Joburg doing about this? And I can quickly fall into Joburg and you know transfer that information without anyone having to go through some bureaucratic hoop. So there is very much that intermediary role, is the one element.”</i>	
T5_ST2_06	Senior Executive, Sustainable Energy Africa (SEA)

<i>“And the other element is that kind of translation role. So, while we are quite highly skilled, we have got this variety of skills, and this has been a specific intention. So that we, you know we have people who can go into the deep engineering space or the deep kind of modeling spaces and very technical, but then we have people who can kind of translate that into a much more, you know the kind of language that the decision makers have to understand or ordinary people understand.”</i>	
T5_ST2_07	Senior Executive, Sustainable Energy Africa (SEA)

<i>“But we were working, so we, the role we play is we again have seeded a technical officer into each of the four cities and they are managed by a line manager. And we provide the kind of, the technical information.”</i>	
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<i>So we, for instance are like this hub that generates on the one hand all the data that provided the kind of evidence based of what would be the financial implications of this change, what are the emissions reductions from this change, what's the global best practice. So we generated a template bylaw that the cities could then work with and adopt. And then of course there's the management of bringing each of those teams together and helping them plan what they'll do as well. So it's a combination of the technical info and the kind of systems management. And then at the same time linking into the national government department instead of relevance."</i>	
T5_ST2_08	Senior Executive, Sustainable Energy Africa (SEA)

The sub-theme of *Adaptive Leadership* consists of six codes from three interviewees and is characterized by the co-adjustment and co-implementation between responsible actors within a multilevel governance system, through the creation of coalitions pushing to implement decarbonization initiatives. The following quotes refer to the identified traits in this leadership logic (Figure N°18):

Sub-theme – Adaptive Leadership: Identified traits.

Figure N°18. Sub-theme: Adaptive Leadership.

A clear example of adaptive leadership was portrayed by one City senior executive who created a coalition with officials and took the national government to court, seeking the allowance of municipalities to purchase renewable energy from independent power producers. Building relationships is a relevant mechanism in this type of leadership, so it is important to understand who has the power to get things done quickly and efficiently, both in formal and informal structures. The respondent highlighted how these dynamics change over time by indicating that in the past it was easier to build relationships with colleagues through regular director meetings, but that more recently, with two directors in the SEM department it requires a special effort to create a platform to engage and build that support.

<i>"So at the national level, we I guess used a pincers approach where we have tried to force the hands of national government by taking them to court to allow us to purchase renewable energy from independent power producers. And parallel to that building a relationship with the officials. And what that has resulted in is that three days before the court case, the national Department released regulations that allowed municipalities to purchase renewable energy from independent power producers."</i>	
T5_ST3_01	Senior Executive (N°1), City of Cape Town

<i>"It's about understanding who does what and where the powers lie, and building the relationships with those. Because as much as you have the formal structures, like any organization, things get done unfortunately quicker, easier if you have those informal relationships."</i>	
T5_ST3_02	Senior Executive (N°1), City of Cape Town

<i>"Then there are the formal structures. I must say it was easier when, when I started I was in the utility services department and before our ED started. So we were temporarily there. And through the regular director meetings, it was then easier to build those relationships. Being in the energy and climate change directory with just two directors, it's not as easy to influence others. You have to make a special effort to create a platform to engage and in that way influence and build support."</i>	
T5_ST3_03	Senior Executive (N°1), City of Cape Town

At a broader scale, the international network respondent highlighted the importance of collaborating with the other South African cities within the C40 network and their respective advisors. Cape Town particularly

has created a position dedicated to tackling building commitments, emphasizing the value of the advisor role in achieving sustainability goals.

<i>“So there is quite a good collaboration that happens there between the cities and those advisors. In the case of Cape Town, we, the sustainable energies marketing Department recognizes that that’s a really important role, that advisor role. They actually created a position specifically to tackle those building commitments.”</i>	
T5_ST3_04	Mid-level Manager/Technical Expert, International Network

Another senior executive at the City exemplified adaptive leadership traits in the relationships they have created with the provincial government, allowing the City to access their data in real time and code it for visual purposes. In addition, through its partnership with the Foreign and Commonwealth Office, the City has developed an internal data strategy, which includes a transversal data coordinating team that brings together data holders from around the City.

<i>“So we have data agreements with the provincial government which allows us to pull that data in real time from whatever their data bases are. So I think we do a lot of the coding of the data to make it visual for our purposes. But it’s a good point. That wasn’t always the case at the start of this pandemic when most of the relationships were not strong and they had to be created.”</i>	
T5_ST3_05	Senior Executive (N ^o 2), City of Cape Town

<i>“We now have a data strategy which is an internal strategy developed in partnership with the Foreign and Commonwealth Office. And we’ve worked over you know over the last year and a bit to do a couple of different things as the city. So, the data coordinating team is transversal in nature. So it brings together data holders from all around the city.”</i>	
T5_ST3_06	Senior Executive (N ^o 2), City of Cape Town

Within the City, the technical expert respondent mentioned that the implementation of the CAP involved the collaboration of various departments, not just environmental management or sustainable energy markets, but others that required their input and implementation. It emphasizes that engaging with all departments is necessary to ensure their needs and goals are met, resulting in a joint process for successful implementation of the plan.

<i>“So, most, not most but a substantial portion of the actions that are within the action plan are not for environmental management or for sustainable energy markets to implement, they are for other departments to implement or for us too implement together as a joint process. And so it’s also been a process of engaging with sort of those departments and in doing so, coming up with sort of parts of the strategy and actions within the action plan that satisfy the needs of everybody involved.”</i>	
T5_ST2_07	Mid-level Manager/Technical Expert, City of Cape Town

Within the sub-theme of *Distributed Leadership*, consisting of five codes drawn from four interviews, key attributes of this type of leadership are evident. Notable traits include collaboration between sympathetic actors embedded in a polycentric governance system, aiming to scale novel approaches for policy execution. The use of mediation and negotiation mechanisms is highlighted as essential for overcoming challenges, including the deliberate resignation of authority in favour of others (Figure N^o19). The subsequent excerpts from the interviews provide concrete evidence, showcasing instances where these traits come to the forefront:

Sub-theme – Distributive Leadership: Identified traits.

Figure N°19. Sub-theme: Distributive Leadership.

The senior executive from SEA mentioned how they collaborated closely with the City while working on the Small-Scale Embedded Generation bylaws, first by drafting the application form, addressing the technical details, and wording the bylaw itself, enabling the scaling up of organizations. This example embodies the ability to work on a small scale and then to scale up and scale out the changes by working through networks.

<i>“So, you know the most recent example is the small-scale embedded generation. We worked, and it wasn't me, so I can talk about it. SEA worked very closely with the City of Cape Town and literally, you know put pen to paper and drafted okay what should the application form look like? What technical details need to be resolved? What you know, what should the wording be that you put into the bylaw to change it? So really the kind of minutia detail that then enabled things to happen. And then you do that little piece and then there's all sorts of amplifications through other organizations, through linking into SALGA. So, the kind of, yeah, the ability to work very small and then amplify it through kind of networks.”</i>	
T5_ST4_01	Senior Executive, Sustainable Energy Africa (SEA)

The EDP executive recounted the diverse range of projects they were involved in as an organization, where building relationships and clarification of people needs, remain as the common factor for getting things done. Further in the interview, the intermediary role of EDP was valued as it gathers people and aims to maintain those relationships.

The EDP respondent stated that the organization’s work spans a diverse range of projects, addressing issues from drought to food system initiatives, adaptive leadership, and the revitalization of the local Central Business District (CBD). Despite the variety, the common thread through all the projects is their focus on building relationships and providing clarity on the necessary changes individuals need to make in order to achieve their objectives.	
T5_ST4_02	Operational Executive, Western Cape Economic Development Partnership (EDP)

The respondent expressed their view that it is not solely about training individuals but rather utilizing intermediary organizations like the EDP. Their approach involves bringing people together through the EDP creating a collaborative environment, without posing threats to any particular entity in the system. The EDP’s goal is to establish and maintain these relationships over time.	
T5_ST4_03	Operational Executive, Western Cape Economic Development Partnership (EDP)

A senior executive from the City, when asked about the mechanisms of engaging with the business sector, indicated that the City is in direct communication with local businesses, as well as working with GreenCape to test novel interventions with stakeholders. Regarding GreenCape, the response of its executive, when asked how the organization manages to involve a large number of different actors, was merely that they have both the technical skills and access to real experts to provide comfort.

<i>“So that is the most important outreach mechanism that we do use where we speak directly to the business sector in Cape Town. We also work with GreenCape, so a number of the new interventions that we might have, we test with GreenCape and they would then test with the players there, the stakeholders that they work with, so the businesses that's part of their forum.”</i>	
T5_ST4_04	Senior Executive (N°1), City of Cape Town

<i>“So, having enough technical skills and enough access to be able to convene real experts to provide comfort, is I think, that's kind of the plot of the secret sauce. And then like a lot of determination.”</i>	
T5_ST4_05	Senior Executive, GreenCape

5.6 Theme 6: Shifts

The sixth and final theme comprised 19 pieces of evidence gathered from seven interviews. It deals with the shifts or transformations that the interviewees had observed or undergone in their climate and sustainability careers over the past few years, either in Cape Town or at a national level. This standalone theme was organized into an overview and the crucial prerequisites necessary for enabling these changes, specific domains of change such as transformations in the energy and building sector, and the role of a crisis as an indirect catalyst. The theme discussion concludes with key insights on these transformations (Figure N°20).

Standalone Theme – Shifts: Conditions for changes, Shifts in energy sector, Shifts in building sector, Crisis as shift trigger, Respondents final thoughts.

Figure N°20. Standalone Theme: Shifts.

Cities are not only recognized as major sources of emissions, but also as places where changes are both possible and necessary. This is further supported by the growing number of urban actors applying resilience thinking.

<i>“So when that links in then with, so then you've got the years of Local Agenda 21 and the realization that cities were this huge site of emissions. And not just the site of emissions but the place where things could change, and needed to change, and you know governance closest to the people.”</i>	
T6_01	Senior Executive, Sustainable Energy Africa (SEA)

<i>“In summary, I don't think there's any doubt in the government of the city of Cape Town now about what resilience is, and what the value of resilience is. And I am increasingly seeing a much greater number of parts of the city organically embracing resilience thinking.”</i>	
T6_02	Senior Executive (N°2), City of Cape Town

To achieve the desired change at the institutional level, political alignment is required first, together with engagement with citizens, the public, and the various sectors to implement these changes. Similarly, the EDP executive noted that high-level coordination amongst top leadership creates an environment conducive to change. This was exemplified by some leaders who, back in 2017 and during several transformations within the City, decided to prioritize the energy path after previous engagements with the Minister of Energy.

<i>“And then thinking you know to bring the change to fruition often requires the political domain to be well aligned, and that then goes full circle back to the kind of citizenry, the public being on board and the sector for these changes.”</i>	
T6_03	Senior Executive, Sustainable Energy Africa (SEA)

The respondent emphasized that a more coordinated effort at the highest leadership level is essential for achieving institutional change. They felt this ensures that the change leads to an enabling rather than a limiting environment.	
T6_04	Operational Executive, Western Cape Economic Development Partnership (EDP)

<i>“So in 2017, the city underwent a transformation process, an organizational development and transformation process, and it was the leaders of the day then that actually decided that a priority or emphasis should be given to a new energy path for the city. This had in my opinion, this came from engagements that the City had had with the minister of energy to receive a determination which is the prerequisites to putting out a program to secure independent power producers, renewable energy from independent power producers.”</i>	
T6_05	Senior Executive (N ^o 1), City of Cape Town

At the energy sector level, shifts are evident as local governments transitioned from merely distributing electricity to taking responsibility for local economic development. This shift is also demonstrated by the transfer of the SEM department from Water and Waste to the Directorate of Energy and Climate Change. A senior executive from the City acknowledged that the energy-related business community is interested in the renewable energy transition and expects the City to accelerate its actions on these issues. This interest was highlighted during a workshop led by the respondent, in which actors such as SEM and electricity services departments, academia, civil society representatives, and people in the markets, shared their views on the future of the sector. As a result, the workshop reportedly how the electricity services department viewed the future, including the potential opportunities and threats.

<i>“And electricity moved from being you know something you just distributed. And then local government suddenly wasn't just distributing electricity, they were responsible for local economic development, they were responsible for the environment in a much bigger way than had ever come before. And then that just converge with the kind of global climate change movement.”</i>	
T6_06	Senior Executive, Sustainable Energy Africa (SEA)

<i>“And then in 2018, the climate change was added to our name. So my Department is in a Directorate called energy and climate change. Prior to that, electricity services was in utility services with water and waste.”</i>	
T6_07	Senior Executive (N ^o 1), City of Cape Town

<i>“And so I ran a visioning workshop with the two departments and here we brought in Anton Eberhardt [sp] and civil society representatives and people in the markets who could talk from their perspectives about their views of what the future would look like in the energy sector. And this started to transform the way the electricity services Department looked at what the future could hold and what the opportunities and threats would be.”</i>	
T6_08	Senior Executive (N ^o 1), City of Cape Town

<i>“I guess one has to recognize that there is kind of the forward looking business community that's trying to be part of the renewable energy you know change, which I guess are the community that are wanting you to go faster, and some of the people who are the IPD, the energy providers and stuff.”</i>	
T6_09	Senior Executive (N ^o 1), City of Cape Town

To a lesser extent, the building sector has also experienced changes, as demonstrated by the SA building program, the first initiative promoting large-scale change to achieve net zero carbon buildings by 2030.

<i>“And then interestingly now, recently, we've been working, it's a program forwarded through C40 which is the big global cities, well you would obviously know. And it's working with the four metros that are member cities to develop much, well net zero carbon building bylaws. So it's the first kind of taking an element of the city's climate action plans and really trying to push for scale change, you know no longer just pilots or... this</i>	
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<i>is like really trying to again it's not just the solar water heater bylaw, but trying to get all new buildings from 2030 have to be net zero carbon, so very energy efficient, and meeting with renewable energy. So you know really, it really speaks to a sector level change because it will very much change how local government structures."</i>	
T6_10	Senior Executive, Sustainable Energy Africa (SEA)

Many respondents agreed that both the 2017 drought and the COVID-19 global pandemic were indirect or unintended triggers for a shift, which was reflected in behavioural changes at various levels. During a crisis, people are prepared to do things faster, more experimentally, and even break hierarchical structures. Also, it helps people understand and overcome misunderstandings about the concept of climate change and how it could potentially affect their lives, the economy, and society. Referring to the previous theme, a senior executive from City clearly exemplified these changes by acknowledging that obtaining data for their visualization purposes was more challenging before the pandemic, when relationships between parties had not yet been established.

<i>The respondent reflected that in times of crisis, people felt a greater urgency, leading them to try different strategies quickly. This adaptive mindset enabled individuals to experiment. In normal hierarchical situations, government officials may face constraints in direct communication with those in senior positions. However, the crisis prompted a departure from these norms, promoting a more flexible and exploratory approach.</i>	
T6_11	Operational Executive, Western Cape Economic Development Partnership (EDP)

<i>"well the drought also helped in that we had a drought recently and people then understood those linkages and how it could affect them."</i>	
T6_12	Senior Executive (N ^o 1), City of Cape Town

<i>"I think the drought you know just solidified to a lot of people that climate change is real and that it's something that we have to address and that it's potentially like you know a massive threat to the city and economy and society."</i>	
T6_13	Mid-level Manager/Technical Expert, City of Cape Town

<i>"COVID has had an impact obviously. Our, you know our ambitions have had to be tailored somewhat but, there is still support and there is still great strides that have been made."</i>	
T6_14	Senior Executive (N ^o 1), City of Cape Town

<i>"But we have actually been heavily advanced by the fact that we've had the drought and now the global pandemic. Because it's allowed us to enter a lot of other spaces far more quickly than we previously would have meant to generate a lot of internal relationships."</i>	
T6_15	Senior Executive (N ^o 2), City of Cape Town

<i>"So we have data agreements with the provincial government which allows us to pull that data in real time from whatever their data bases are. So I think we do a lot of the coding of the data to make it visual for our purposes. But it's a good point. That wasn't always the case at the start of this pandemic when most of the relationships were not strong and they had to be created."</i>	
T6_16	Senior Executive (N ^o 2), City of Cape Town

Some of the respondents shared their concluding remarks regarding the changes. One of the senior executives from City expressed gratitude for being able to implement innovative changes within a bureaucratic environment and witness the positive outcomes. Similarly, the City Councillor expressed feeling fortunate to have leaders who understand the importance of sustainability and the green

economy. Finally, the GreenCape executive acknowledged that in South Africa the discussion around the green economy is shifting from a focus on cost-cutting to one that highlights potential opportunities.

<i>"I was very doubtful that we would get as far as we got and it was very demotivating to try and do something innovative in such a bureaucratic an administrative intensive environment. Yeah, you know you, it's not easy to be innovative in local government. So, I'm very grateful for the opportunity actually to have gotten through that and be in the position now where we can start seeing some changes."</i>	
T6_17	Senior Executive (N ^o 1), City of Cape Town

<i>"It's certainly shifting would be my view. But, in terms of... so if you think about who's currently using the green argument most vociferously in South Africa is typically around things like a carbon tax or things like Environmental Protection. It's things like setting up some sort of adjusting to transition fund to rescale [reskill?] miners. So all of these are perceived as costs. And I think that a lot of the rhetoric around many of the voices in the green economy is about minimizing, about protection and about changing behavior patterns rather than about trying to capture an imagination with opportunities."</i>	
T6_18	Senior Executive, GreenCape

<i>"we're lucky to have majority and also have people in leadership roles that understand the importance. It's not just about climate change anymore it's about the green economy."</i>	
T6_19	Political Representative, City of Cape Town

6 DISCUSSION

6.1 Summary of Findings

The research findings presented contribute to the existing body of both academic and practical knowledge concerning public leadership in addressing climate change within the context of urban settings. More specifically, the scope is to understand the landscape of leadership strategies employed by governance actors who are actively driving the transition towards climate-resilient and low-carbon urban development. With a focus on the dynamic urban environment of Cape Town, South Africa, this research explores how various leaders, employing various strategies, collaborate to make the city more sustainable and build a climate-resilient future. The main question guiding this dissertation was: "*Which key actors, leadership strategies, and institutional factors are integral to the realization of an urban climate transition in Cape Town?*" To structure this inquiry, a series of interconnected research sub-questions were formulated:

1. **Identifying Key Actors:** *Who are the actors involved in the urban climate transition in the City of Cape Town?* Through comprehensive examination, this research seeks to uncover the constellation of actors who collectively or individually contribute to Cape Town's climate-resilient transformation. Linked to theme N^o1 – Actors.
2. **Navigating Institutional Constraints:** *What are leadership-related institutional constraints for achieving Cape Town's climate goals?* By critically assessing the institutional landscape, this study aims to explain the potential constraints influencing the efficacy of leadership strategies. Linked to theme N^o4 - Constraints.
3. **Characterizing Leadership Strategies:** *Which leadership strategies are being employed in the City of Cape Town for achieving the urban climate transition?* Through rigorous analysis, this research attempts to reveal the diverse leadership strategies executed within the city's dynamic context. Linked to theme N^o5 – Co-creational Leadership Strategies.
4. **Analysing Typology Implementation:** *Does the evidence from Cape Town support the urban climate governance leadership typology provided by Hofstad and Vedeld (2021) and Hofstad et al (2022) or suggest the need for modifications?* By examining the practical manifestations of leadership strategies, this study aims to bridge the gap between empirical realities and theoretical frameworks.

Drawing from prior research on co-creational leadership theories by Hofstad and Vedeld (2021) and Hofstad *et al* (2022), and implementing Braun and Clarke's (2006) guidelines for qualitative thematic analysis on the interview dataset, this study identified the overarching themes and sub-themes to answer the research questions. The study identified six major themes based on 148 codes. The first theme portrays the key individuals and organizations that have actively participated in the development of urban climate transition initiatives. The second theme captures the local and international networks that have served as both active actors and platforms for coordinating mechanisms among various stakeholders. The

third theme showcases the initiatives driving sustainable, resilient, and low-carbon development, as cited by interviewees. The fourth theme reveals the challenges and dilemmas that concerned actors have faced while working towards the climate transition. The fifth theme features the four leadership types which actors have engaged with to cope with challenges, influencing the outcomes of efforts to create greener, more sustainable cities. The final theme captures the changes perceived by interviewees in their careers, organized into specific topics for clarity.

The order of the list of themes is not aleatory, it follows a logical sequence (or narrative) beginning with the actors. These actors operate within local and international networks, which logically follow in the next position. Then, it follows the implementation of the plans, programs, policies, and strategies, which inevitably encounter constraints that must be overcome through leadership strategies. By overcoming these constraints, shifts occur, ultimately leading to the Urban Climate Transition. This narrative flow is visually represented in Figure N°21, showing the relationship between the themes.

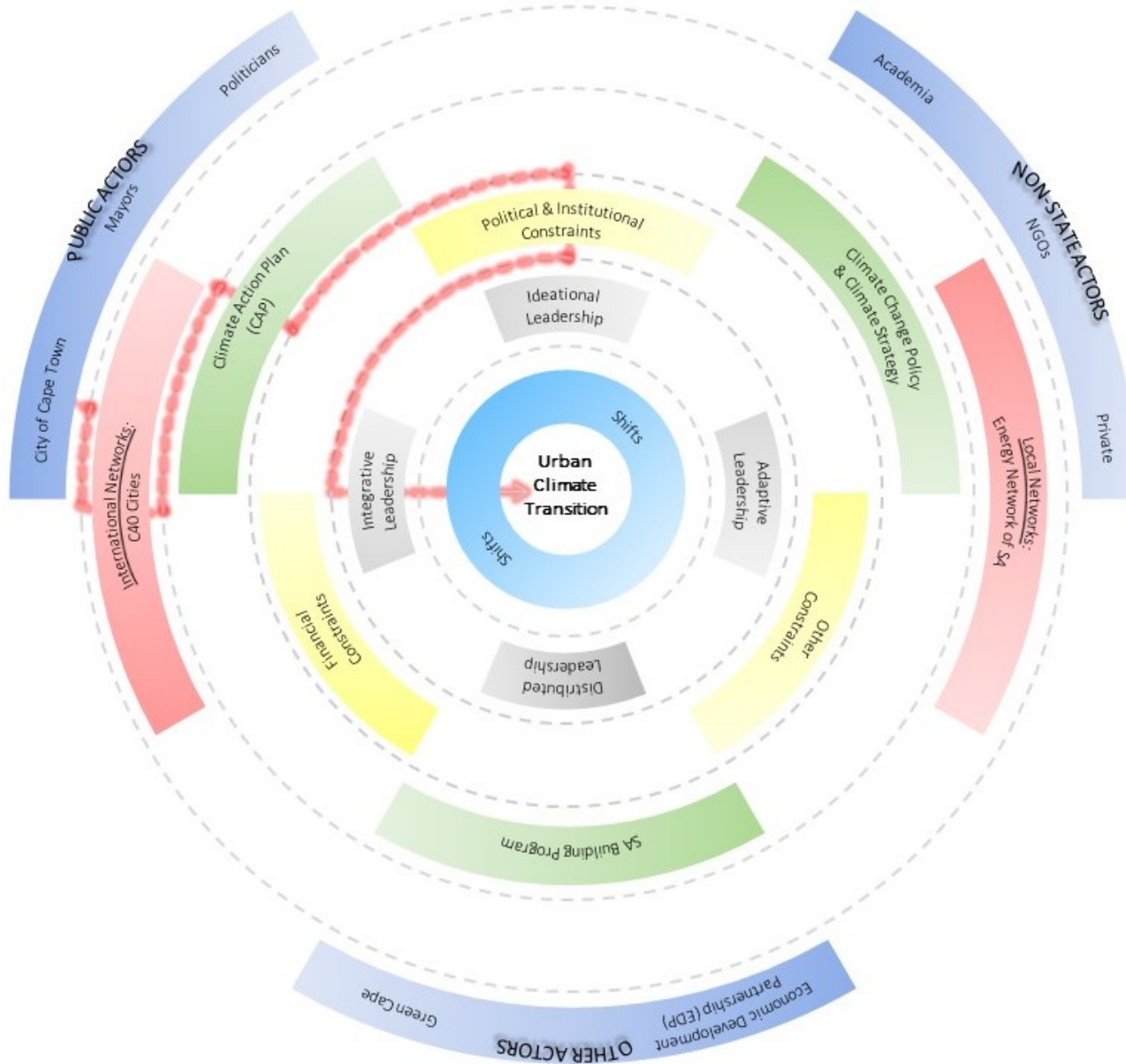


Figure N°21. Example of relationships between themes. Own elaboration. The diagram illustrates, via the red-dotted line, a narrative beginning with the City of Cape Town as Public Actor, which engages with the hybrid-actor international network of C40 Cities, to support in drafting the Climate Action Plan (CAP). Together they address Political and Institutional Constraints using integrative leadership strategies, facilitating a Shift towards Urban Climate Transition.

As this discussion chapter unfolds, each sub-question is explored in depth, drawing from both empirical evidence and theoretical frameworks. By engaging with these questions, the dissertation explains how Cape Town is managing climate-related challenges and contributes to the broader knowledge on public leadership in the urban context. The subsequent sections explain the analysis and main findings for each sub-question, providing a deeper understanding of the interactions between actors, strategies, and institutions driving the urban climate transition in Cape Town.

6.2 Identifying Key Actors

6.2.1 Public Actors

6.2.1.1 *City of Cape Town: Policy innovations and implementation*

The recognition of City of Cape Town as a leader in climate governance reinforces the idea that cities can test and develop new policies (Anguelovski and Carmin, 2011), introducing pioneering initiatives that shape a more resilient urban future. Some of these innovations include:

Renewable Energy Initiatives: The City demonstrates strong dedication to sustainable energy through ambitious projects, embracing its role as a local government leading experimentation to decarbonize, consistent with the postulates of Bulkeley and Castán Broto (2013). In this sense, working with private sector actors like SAPOA and the Green Buildings Council, the City has implemented solar energy programs that make use of the abundant sunlight in the area (as shown in excerpt T1_ST2_10). These initiatives not only reduce the city's carbon emissions but also set examples for other cities pursuing sustainable energy practices. These collaborations address the challenge of cross-city meta-learning (Wolfram et al, 2019) and lead to the emergence of new political arenas, as suggested by Acuto and Rayner (2016).

Water Conservation Strategies: In response to the 2018 Day Zero water crisis, Cape Town demonstrated impressive innovation in policies and practices by adopting water conservation strategies in an effort to change water consumption patterns in both domestic and commercial sectors (Gordon, 2018; Ziervogel, 2019). Initiatives such as the installation of water tanks, boreholes, and greywater reuse systems highlighted the city's ability to adapt [T1_ST2_15]. Partnerships with NGOs enabled communities to engage in water-saving efforts, underscoring the importance of involving local groups in policy implementation, a key trait identified by Bulkeley and Castán Broto (2013).

Climate-Resilient Urban Planning: Cape Town's urban planning prioritizes resilience to climate impacts. Partnering with academic institutions [T1_ST2_01], the City has developed strategies that incorporate climate resilience into its urban plans. These strategies, such as creating green spaces, sustainable transportation networks, and climate-resilient infrastructure, address current climate issues while setting the foundation for a more sustainable city (Anguelovski and Carmin, 2011).

Inclusivity and Social Impact: Cape Town's policies prioritize inclusivity, ensuring that everyone in society is considered [T3_01]. Community-driven renewable energy projects, supported by the City and NGOs,

provide financial benefits to locals while advancing broader climate goals. These initiatives aim to ensure that enhancing resilience to climate challenges does not exacerbate existing social inequalities, contributing to a more equitable city for all (City of Cape Town, 2022a).

Continuous Learning and Adaptation: Cape Town's policy development approach is rooted in ongoing learning. Regular consultations with universities and technical experts keep the City updated on the latest developments in climate science and sustainable technology. This process of continuous learning enables Cape Town's policies to evolve and adapt to new climate challenges (Wolfram et al, 2018), making the city a leader in climate governance (Bulkeley et al, 2013).

In summary, Cape Town's proactive policies embody the theoretical concepts of experimental cities. By focusing on renewable energy, water conservation, resilient urban planning, social inclusion, and continuous learning, Cape Town is progressively dealing with climate issues and generating lessons for cities elsewhere in South Africa and globally. This approach is shaping a cityscape that is better prepared to face future climate challenges. While it takes time to translate policy aims and intentions into widespread practices, and not all impacts have been fully addressed yet, the city is moving in a positive direction.

6.2.1.2 Mayors and Local Politicians: Leadership and consistency

Cape Town elected mayors and local politicians highlight the pivotal role of local political leadership in urban climate governance. Acting as key drivers, they both foster a culture of innovation and collaboration (Anguelovski and Carmin, 2011). Mayors like De Lille provided visionary leadership, championing renewable energy projects, and setting a clear climate agenda. Despite political transitions, continuity in climate policies under leaders like Mayor Plato ensured the city's sustained momentum [T1_ST1_10]. These leaders performed as political champions, fostering collaborative governance, and avoiding the politicization of the climate debate [T1_ST1_14]. Their long-term vision extended beyond immediate gains, focusing on leaving a legacy of sustainability. By embodying theoretical ideals, Cape Town's mayors and local politicians showcase the transformative power of consistent political commitment, steering the city toward a resilient climate future (Wolfram et al, 2018). However, interview evidence also highlights the limitations of politicians' influence, especially where social and economic problems and frustrations with public service delivery have undermined trust in government. While elected leaders play a pivot role in driving and enabling change towards climate resilient urban development, it is clear that they need to work in collaboration with civic leaders and thought leaders.

6.2.2 Non-state Actors

6.2.2.1 Academia: Knowledge integration and collaborative research

The collaborative efforts between the City and academia align with the theoretical frameworks that emphasize knowledge integration and participatory approaches described by Bulkeley and Castán Broto

(2013) and Gordon and Johnson (2017). For instance, Stellenbosch University, through its Centre for Renewable and Sustainable Energy, provides tailored insights relevant to the local context [T1_ST2_01], addressing the subnational scale perspective that is often overlooked (Wurzel et al, 2018). Similarly, the UCT Business School collaborates with the SEM Department in reflective practices [T1_ST2_02], demonstrating a continuous learning process in governance, as emphasized by Wolfram *et al* (2019). The participation of the CSIR further underscores the vital role of national research organizations in supporting local climate initiatives [T1_ST2_05]. This highlights the interconnectedness emphasised in earlier urban climate governance studies (Bulkeley and Castán Broto, 2013). These partnerships facilitate dialogue across different sectors and disciplines, with some involving local community members, thereby enriching Cape Town's climate strategies with diverse perspectives and innovative solutions. Academic collaborations serve as a practical demonstration of how theoretical concepts can be applied effectively to real-world climate projects, ultimately contributing to the city's resilience and sustainability.

6.2.2.2 NGOs: Bridging gaps and empowering communities

The study found that NGOs perform as intermediate actors, bridging the gap between government entities and communities. This translation feature, embodied for example by Sustainable Energy Africa (SEA), represents theoretical ideals of polycentric leadership (Gordon, 2018), and participatory climate governance (Bulkeley and Castán Broto, 2013). SEA's method reflects theoretical concepts by connecting government bodies and communities, being achieved through open discussions and capacity-building programs that enhance their skills, that clearly resonates with the framework developed by Bernstein and Hoffman (2018) on political mechanisms for disrupting carbon lock-ins. By doing this, SEA empowers marginalized groups, embodying ideas of decentralized leadership and governance innovation (Gordon, 2018). Focusing on community ownership and long-term sustainability, it aligns with theories emphasizing democratization of climate decisions (Hofstad et al, 2022). SEA's transformative role underscores the importance of grassroots NGOs in promoting equality and strengthening Cape Town's climate governance, serving as a model for inclusive urban climate initiatives.

6.2.2.3 Private Sector actors: Innovation and investment

Private Sector actors, such as SAPOA and the Green Building Council, collaborate closely with the SEM Department within the City [T1_ST2_10 and T1_ST2_11], embodying the theoretical principles of private sector innovation and investment ecosystems that drive the green shift (Bulkeley and Castán Broto, 2013). By engaging in initiatives such as sustainable procurement and energy management, these collaborations highlight the pivotal role the private sector has in shaping urban climate policies. In addition, and during the 2018 Day Zero water crisis, several private sector entities presented their contributions by implementing water-efficient technologies [T1_ST2_15], translating into a theoretical emphasis on climate-resilient practices (Hofstad et al, 2022). Their involvement and contributions in areas such as green energy and sustainable construction [T1_ST2_11], highlight their capacity for innovation and investment in climate solutions, driving the realisation of policy ideals into material changes in the city.

6.2.3 Other Actors

6.2.3.1 *Green Cape: Facilitating regulatory revisions*

As a sector development agency, Green Cape plays a pivotal role in regulatory revisions, embodying principles of governance orchestration and collaborative policymaking (Gordon and Johnson, 2017). Their support in updating regulations for SSEG demonstrates their role in aligning policies with market demands [T1_ST3_03]. By acting as intermediates between governmental departments and private entities, GreenCape promotes flexible leadership and collaborative governance, ensuring that policies can adapt to evolving needs (Gordon and Johnson, 2017). This demonstrates how intermediary organizations can transform urban climate governance by making it more adaptable, thereby promoting better alignment between policy objectives and operational investments.

6.2.3.2 *EDP: Civil engagement and problem-solving*

The Western Cape Economic Development Partnership (EDP), essential for community engagement and problem-solving, is aligned with adaptive leadership theories and inclusive governance highlighted by Gordon and Johnson (2017). EDP's initiatives, such as drought management and urban renewal, demonstrate how theoretical concepts work in real-world contexts [T1_ST3_06]. By fostering collaboration between provincial and local government entities, NGOs, and communities [T1_ST3_07], the EDP promotes civic engagement and polycentric leadership, ensuring that diverse voices are included in decision-making processes (Bulkeley and Castán Broto, 2013). Through problem-solving masterclasses and strategic partnerships, EDP enhances the resilience of the city, demonstrating how intermediary entities can foster the creation of responsive, inclusive, and resilient urban communities.

6.2.3.3 *C40: A Hybrid Actor*

The C40 Cities network embodies a particular condition among the identified actors within the urban climate governance constellation, acting both as an international network and proactive actor on climate initiatives (Acuto and Leffel, 2021). On one hand, C40 connects Cape Town to global knowledge exchanges, enabling the city to benefit from international experiences, aligning with the principles of city networks as discussed by Davidson et al (2019). On the other hand, it directly influences Cape Town's climate policies through technical assistance, collaborative initiatives, and catalysing partnerships across various sectors (Davidson et al, 2016). C40's dual role empowers the city through knowledge sharing and catalyses local climate action, reflecting the evolving nature of contemporary urban climate governance (Gordon and Johnson, 2017). This hybridity illustrates the complexity of addressing climate change in cities, emphasising the need for flexible and collaborative strategies.

6.3 Navigating Institutional Constraints

Navigating the changes needed to realise Cape Town's ambitious climate goals is tightly linked with overcoming institutional constraints on exercising leadership, as identified in this research. One of these obstacles is securing broad political commitment, a key driver often hindered by the reluctance of certain politicians, which hampers progress on climate-related issues [T4_ST1_01]. This finding is aligned with the challenges outlined by Acuto and Leffel (2021) regarding the pivotal role of political leaders. In addition, legislative blockages, which delay policy implementation processes, resonates with Wurzel *et al's* (2018) analysis of the difficulties subnational actors face when interacting with global climate governance frameworks [T4_ST1_01]. Another constraint is the fragmentation of institutional governance, which lacks the required cohesive structure noted in Hofstad *et al's* (2022) typology of co-creational leadership, placing emphasis on integrated approaches for effective governance. This constraint is embodied by excerpts T4_ST1_08; T4_ST1_09; T4_ST1_10 and T4_ST1_11, mentioning how the fragmented departmental initiatives within the City leads to disjointed efforts, hindering the implementation of city-wide commitments.

Financial constraints and the demand for a clear business case hinders green initiatives, with a focus on demonstrating tangible cost benefits within the framework of budget limitations and municipal finance management constraints [T4_ST2_03 and T4_ST2_03]. This issue echoes the exploration of urban climate experiments, which highlight resource limitations that hinders innovation (Bulkeley and Castán Broto, 2013).

Hierarchical challenges emphasize the need for leadership to overcome internal resistance, aligning with Hofstad and Vedeld (2021), who stress the importance of fostering collaborative cultures and effective communication strategies. This challenge is embodied by the resistance of senior officers and managers, making it difficult to organize adaptive training for entire teams [T4_ST3_01 and T4_ST3_02]. The last constraint pertains to the communication of climate urgency, as discussed by Gordon and Johnson (2017). It emphasises the challenges City officials and politicians face in raising awareness and promoting action, often hindered by the misconception that climate change is a distant, future threat that does not relate to people's daily concerns [T4_ST3_05 and T4_ST3_06].

Addressing all these challenges requires a robust interdepartmental collaboration, a principle emphasised by Anguelovski and Carmin (2011). Incorporating these scholarly perspectives reveals the complex nature of Cape Town's climate governance and offers valuable insights for shaping effective leadership strategies to further the city's climate action initiatives.

6.4 Characterising Leadership Strategies

6.4.1 Ideational Leadership Strategy

Strategies referred to as ideational leadership remain aligned with the conceptualization of co-creational leadership proposed by Hofstad and Vedeld (2021), and more specifically with the framework of co-creational leadership ideal types developed by Hofstad *et al* (2022). In this line, easing the co-design of shared goals, vision, and the design of climate-oriented policies among a constellation of sympathetic actors operating in a polycentric governance context, stands as some of the core features. This is empirically illustrated by workshops and masterclasses organized by EDP. These sessions aimed to foster relationships among stakeholders from diverse backgrounds, breaking down the siloed structures between government departments and civil society [T5_ST1_01, T5_ST1_02 and T5_ST1_05]. Additionally, the City's acknowledgment that they cannot be experts in every topic, and their approach to facilitating spaces for others to take the lead, underscores empowerment as a core ideational mechanism in co-creational leadership [T5_ST1_07 and T5_ST1_08]. A comparable instance within the City is seen in the SEM department's strategy of empowering local leaders to communicate about the climate crisis in disadvantaged communities [T5_ST1_10]. In sum, City officials take on a facilitating role, not as experts, creating spaces for stakeholders to collaborate—an essential aspect of co-creation. Organizations like EDP host workshops that prioritize knowledge exchange, enriching public sector collaboration. These local efforts are also connected to global networks, fostering learning, capacity building, and global influence.

6.4.2 Integrative Leadership Strategy

In line with the integrative leadership approach delineated in the typology developed by Hofstad *et al* (2022), several strategies were applied to ensure policy integration across departments, organizations, entities, and sectors, with the aim to enable the co-design of new institutions and policies. The multilevel governance systems were effectively navigated among mutually dependent governmental actors, exemplified in the design of the climate strategy or the hazard vulnerability risk assessment [T5_ST2_01 and T5_ST2_05], demonstrating the power of integrative leadership in breaking departmental silos, as suggested by Hofstad *et al* (2022). In addition, the coordination efforts between different City teams and departments demonstrated the importance of alignment and collaboration. This is embodied by the strong technical background of the SEA team, which plays an intermediary role in navigating bureaucratic constraints within cities and organizations [T5_ST2_07 and T5_ST2_08]. At a broader scale, the City's collaboration with external entities like C40 Cities network showcased the value of collective efforts in achieving sustainability goals at both local and national levels. C40 played a key role in uniting cities and fostering collaboration among different city entities and agencies (Gordon, 2018). Overall, integrative leaders leverage their influence to broaden their formal mandate and policy impact. They proactively engage in relevant arenas, enhancing capacity (Bernstein and Hoffmann, 2018) and shaping new policies at national and international levels to address unattended political blind spots and conflicting concerns.

6.4.3 Adaptive Leadership Strategy

Adaptive leadership is embodied through relationship-building and the ability to rapidly adapt to changing circumstances. In Cape Town, adaptive leadership both relates to the implementation of policies and the development of urban economy and fabric of the city, ensuring the resilience of structures and systems. These principles align with the typology from Hofstad *et al* (2022). In addition, an essential key adaptive leadership approach involves bridging interested actors across sectors, levels, and scales, resonating with the third mechanism from Bernstein and Hoffmann (2018), catalysing coalitions through *coalition building*. A representative example is the coalition the City formed when it took legal action against the national government to allow purchasing energy from independent power producers [T5_ST3_01]. City executives demonstrated resilience and proactive decision-making by taking legal action to promote renewable energy.

6.4.4 Distributed Leadership Strategy

Operating within a polycentric governance framework, distributed leadership in Cape Town features collaborative networking and embodies key co-creational leadership concepts outlined by Hofstad and Vedeld (2021). This approach fosters essential relationships, understanding of stakeholders needs, and employs mediation and negotiation strategies to stimulate co-creation. Distributive leaders employ their technical knowledge and networks to expand initiatives, facilitating co-creation platforms, and scaling up initiatives (Hofstad et al, 2022). In deploying green/climate innovations and networked initiatives, local entities like SEA, EDP, and GreenCape have excelled in practicing distributive leadership. For instance, SEA's collaboration with the City of Cape Town involved detailed work on SSEG bylaws, which enabled scaling through networks and connections, showcasing the potential to amplify impact from small beginnings [T5_ST4_01]. The EDP executive highlighted the role of this intermediary organisation in various partnership projects, emphasising coalition-building and clarifying needs (Bernstein and Hoffmann, 2018). EDP's function in fostering and sustaining stakeholder relationships is key [T5_ST4_02 and T5_ST4_03]. Similarly, GreenCape's partnership with the business sector and the City highlights its importance in testing interventions and engaging stakeholders who will need to implement new rules and regulations. Their approach employs technical skills and expert networks, facilitating the involvement of diverse actors in regional green economy solutions [T5_ST4_04 and T5_ST4_05].

6.5 Analysing Typology Implementation

In addressing the research question regarding the compatibility of the typology of co-creational leadership developed by Hofstad *et al* (2022), with the empirical evidence from Cape Town, the following insights emerge. The evidence obtained about Cape Town's climate governance initiatives gives rise to a nuanced narrative. On the one hand, there are clear echoes of leadership principles from the typology in the actions of leaders engaging in the climate change space. This is demonstrated through initiatives such as the creation of specialized roles, collaborative engagements within networks such as C40, and adaptive measures in response to climate challenges like drought and water scarcity. In a similar way the role of

advisors in steering sustainability commitments and demonstrating adaptive leadership resonates strongly with the framework elements. Both elements and dimensions from the framework served as guiding principles for identifying specific leadership traits within the interview data. This guided the allocation of these traits into their respective types of leadership.

However, there are certain divergences between the concepts and the empirical evidence that may indicate the potential need for adaptations or extensions to the existing typology, especially when applying it to other contexts. While Cape Town demonstrates traits of strategic intent as established by the typology, the actual outcomes sometimes vary due to contextual nuances. For instance, despite engaging in collaborative networks that supports the City, the degree of actual impact or success in achieving sustainability objectives in a tangible sense could fluctuate due to regional features, resource limitations, political dynamics, or institutional capacity. Some specific applications of each leadership type from the typology remain not applicable (e.g. *Integrative leadership to provide wider institutional leeway* or *adaptive leadership for blended finance investments*).

Overall, comparing Cape Town's climate initiatives to Hofstad *et al* (2022) co-creational leadership model reveals both similarities and subtle differences. While certain principles align, contextual factors suggest the model may require adjustments for different settings. Collaborative efforts reflect strategic intent, but outcomes diverge due to regional issues, emphasizing the need for adaptable leadership strategies in different contexts.

7 CONCLUSION

The study explored the complex landscape of navigating and leading the urban climate transition in Cape Town, contributing to the overall knowledge with a contextual understanding of the city's approach to climate leadership. Key actors, institutional constraints, and collaborative leadership strategies employed within the city were uncovered through qualitative thematic analysis applied to a set of in-depth, semi-structured interviews, using Hofstad *et al's* (2022) typology as the theoretical framework. Ideational, integrative, adaptive, and distributed leadership approaches were found to have been strategically employed in Cape Town to engage stakeholders, navigate governance systems, build relationships, and promote collaboration. Additionally, the diverse constellation of relevant actors, such as governmental, non-state, and intermediary entities, underscores a multi-dimensional approach crucial for Cape Town's effective and resilient urban climate transition. A set of institutional constraints, ranging from political reluctance to ongoing difficulties in overcoming fragmented governance arrangements and siloed organisational designs, highlights the various challenges facing the city's climate initiatives, particularly in translating policy and regulatory innovations into operational changes.

Findings underscored the significance of context-specific leadership strategies, emphasizing the need for adaptability and proactive engagement to achieve sustainable, low-carbon and climate-resilient urban development goals. Cape Town's experiences serve as valuable lessons for urban settings tackling climate challenges and transitioning toward sustainability, highlighting the critical role of leadership flexibility and tailored approaches that promote cooperation and alignment between diverse actors and sectors. These insights provide guidance for cities globally in navigating their unique contexts and effectively driving transformative change towards sustainability.

7.1 Limitations of the Research

Despite the key insights derived from the research, certain limitations need to be acknowledged. Firstly, the contextual specificity of the findings limits their applicability to urban areas beyond Cape Town. Urban settings exhibit considerable diversity in governance frameworks, socio-economic dynamics, and climate-related issues. Additionally, as a city situated in the Global South, Cape Town faces a different set of challenges and opportunities to cities in the Global North. The interplay of cultural, economic, and political dynamics within the African context shapes the implementation and success of leadership strategies in ways that are distinct from cities in other parts of the world.

Another limitation is the heavy reliance on a relatively small set of qualitative interview data. While this approach provided rich and detailed insights into the perceptions and experiences of key actors, it inherently involves limitations related to the subjectivity and positionality of respondents. Certain nuances or dimensions of urban climate governance could be overlooked due to the limited number of actors represented by interviewees.

7.2 Future Research

Further research in the field of collaborative leadership among diverse stakeholders, institutional constraints in urban climate governance, adaptive leadership principles, future-proofing strategies, and capacity building holds immense relevance for advancing urban sustainability. Investigating collaborative dynamics and associated leadership strategies across cities with different socio-political-economic contexts could unveil nuanced approaches that transcend geographical boundaries, fostering a global exchange of best practices. Similarly, further examination of institutional constraints and their contextual variations could offer insights into how to tailor solutions that adapt to diverse urban landscapes while enabling the scaling up and scaling out of initiatives that can lead to widespread systemic change. Further research on future-proofing strategies and collaborative learning endeavours could illuminate new practices, cutting-edge technologies, and emerging trends, enabling cities to proactively anticipate and address forthcoming challenges in an ongoingly, adaptive, and dynamic manner, avoiding lock-ins as conditions change. Moreover, studies emphasizing capacity building and empowerment programs would underscore the transformative potential of informed, engaged communities in driving sustainable urban development. Thus, further research in these areas stands as a cornerstone for refining strategies, fostering innovation, and catalysing global progress towards resilient, sustainable cities and the leadership required to unlock and spread such changes.

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9 ANNEXES

9.1 Annex I: Summary document of research context

GreenGov

The GreenGov project aims to create new, cutting-edge knowledge on which leadership strategies and mechanisms can effectively support co-creation, learning and innovation in favour of the green shift. The green shift is pursuing goals of sustainable, low carbon urban development to transform cities towards more climate smart, energy efficient, inclusive, resilient and sustainable futures.

Key questions to be addressed are:

- What challenges and dilemmas do public leaders face in promoting the green shift, how they cope with them, and how their coping strategies affect the outcomes of the endeavours to make cities greener and more sustainable?
- How can cities build co-creation arenas and through these enhance their capacity for creating synergies between institutional layers of hierarchical, market-inspired and network measures that together make up the governance mechanisms available to political and administrative leaders when striving for sustainable low carbon transformation?

These questions will be explored in-depth in the cities of Oslo, Gothenburg and Copenhagen, and to a lesser extent in Cape Town as a way of exploring what can be learnt from a very different context to the Scandinavian cities.

A transdisciplinary research approach is combined with CityLabs as design experiments to investigate how different leadership interventions influence green co-creation in different contexts. Results will be based on case-studies and co-creational actions in the cities of Oslo, Gothenburg and Copenhagen. GreenGov will facilitate learning by also exploring examples of co-creational leadership in Cape Town as an ambitious yet dissimilar city regarding its climate policies and activities. This will not be a full case study, but rather an opportunity to share examples to inspire further development of co-creation and governing of the green shift in Scandinavia and South Africa in different cultural-institutional settings.

By taking a transdisciplinary and applied approach to the research on co-creational leadership and policy learning, the project aims to challenge, develop and change conventional knowledge and habitual solutions concerning 1) governance and policy practice, 2) research practice, and 3) theory development in the context of transformation to sustainable, low carbon cities. The GreenGov focus on co-creational leadership and new, innovative policies and institutional structures will contribute to city, national and international efforts to realize the New Urban Agenda and the Sustainable Development Goals, particularly SDG goal 11 of making cities inclusive, safe, resilient and sustainable.

The Greengov project will study a number of cases of co-created climate solutions that involve public and private actors at the city level; local, regional and national actors in a multi-level governance system; and public leaders and managers from different cities. The cases will be studied based on data drawn from document analysis, qualitative interviews and observations. The use of different data sources enable triangulation of the results.

9.2 Annex II: Interview guide



GreenGov interview guide

Aim: to create new, cutting-edge knowledge on which leadership strategies and mechanisms can effectively support co-creation, learning and innovation in favour of the green shift, i.e. pursuing goals of sustainable, resilient, inclusive, low carbon urban development.

Co-creation: *"process through which two or more public and private actors attempt to solve a shared problem, challenge or task through a constructive exchange of different kinds of knowledge, resources, competences and ideas. These elements enhance the production of public value in terms of visions, plans, policies, strategies, regulatory frameworks, or services, either through a continuous improvement of outputs or outcomes or through innovative step-changes that transform the understanding of the problem or task at hand and find new ways of solving it"* (Torfing et al. 2017)

Research questions:

1. What challenges and dilemmas do public leaders face in promoting the green shift?
2. How do they deal with them, and how do their coping strategies affect the outcomes of the endeavours to make cities greener and more sustainable?
3. How can cities build co-creation arenas to enhance their capacity for creating synergies between institutional layers of hierarchical, market-inspired and network measures that together make up the governance mechanisms available to political and administrative leaders when striving for sustainable low carbon transformation?

Interviewee background info:

- How long have you been working in your current job?
- What is your education/background/past experience?
- What are your core responsibilities?
- Are you a member of any professional network? Other networks?

Guiding interview questions:

- 1) Describe the initiative and its motivation and objectives (i.e. how does it promote the green shift?) [by initiative we mean any policymaking or planning process, programme or project that is part of pursuing goals of sustainable, resilient, inclusive, low carbon urban development in Cape Town]
- 2) What phases has the initiative been through?

- 3) Which actors are/have been involved in the different phases of the initiative?
 - a) Why: what is the background for the actor's composition?
 - b) What role do politicians play in the initiative?
 - c) What role do different parts of the administration play?
 - d) Who formally leads the initiative currently?
 - e) Who takes leadership in practice?
 - f) Has the formal and/or practical leadership changed over time and if so, why?
- 4) What framework conditions (legal, political, economic, and cultural) affect the possibility of achieving the initiative's goals?
- 5) To what extent and how do politicians and citizens / the public have input into and control of the initiative?
- 6) What networks and co-ordination mechanisms do you think are key to promoting the objectives and outcomes of the initiative? (within the city, between cities, national, international)
- 7) Describe your role in the initiative.
- 8) How have you worked to ensure the initiative progresses? (Facilitator)
 - a) By creating understanding of the measure? (Educational/Informative measures)
 - b) Through rules/guidelines? (Legal instruments)
 - c) Through financial means?
 - d) Through organizational measures (reorganization, establishment of arenas/networks)?
 - e) Through digital instruments?
- 9) How have you stepped forward when/if you have met resistance to the initiative (from actors or from framework conditions)? (Catalyst)
- 10) Can you describe a situation / key moment in which you were successful in getting a step closer to achieving the goal of the initiative?
 - a) What enabled the success?
 - b) What does it take to pull the initiative another step further?
 - c) What barriers do you need to keep an eye on?
- 11) What has come out of the process thus far?
 - a) Experiments & innovations
 - b) Learning
 - c) Ideas, political, organizational, technical solutions?
- 12) What is the most important function of the community's/network's climate transformation in general and the initiative in particular (knowledge feed, new ideas, creating commitment in own organization, reputation or "branding", etc)?