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## The Durban Climate Change Strategy: Lessons learnt from the 2021 strategy review and implementation plan

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Review article

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### Abstract

Urban local governments are increasingly developing climate change adaptation plans. However, there is limited literature on climate change adaptation experiences of African cities, particularly with regard to moving from strategy development to implementation. This continues to hamper efforts to understand and guide city climate change actions on the continent. This article helps address this gap by providing critical insights into the opportunities and challenges experienced, and the solutions found in the process of developing and implementing the Durban Climate Change Strategy (DCCS) in the City of Durban, South Africa. The initial 2015 DCCS was reviewed in 2020/2021, and an analysis of the process and its outcomes provide useful focus areas that could guide other cities across the Global South and beyond for implementing climate change strategies. Based on these focus areas, the article demonstrates that there are considerable governance and other barriers to this process that span multiple scales, but also many opportunities such as good organisation, ongoing support across multiple departments and scales, and perseverance that can be harnessed. The findings have significant practical and policy implications for developing and implementing urban climate strategies and provide important conceptual insights for building transformative resilience in challenging governance contexts.

**Keywords:** Climate change adaptation, climate change strategy, implementation, lessons, local government, Global South

## DIE DURBAN KLIMAATSVERANDERING-STRATEGIE: LESSE GELEER UIT DIE 2021-STRATEGIEHERSIENING EN IMPLEMENTERINGSPLAN

Plaaslike regerings in stede ontwikkel toenemend klimaatsverandering-aanpassingsplanne. Daar is egter beperkte literatuur oor klimaatsverandering-aanpassingservarings vanuit Afrika-stede, veral oor die oorgang van strategie-ontwikkeling na implementering. Dit belemmer steeds pogings om stadsklimaatveranderingsaksies op die vasteland te verstaan en rigting te gee. Hierdie artikel help om hierdie leemte aan te spreek deur kritiese insigte te verskaf oor die geleenthede en uitdagings wat ervaar word, en die oplossings wat gevind word in die proses van ontwikkeling en implementering van die Durbanse klimaatsveranderingstrategie (DCCS) in die stad Durban, Suid-Afrika. Die aanvanklike 2015 DCCS is in 2020/2021 hersien en ontleding van die proses en die uitkomst daarvan bied nuttige fokusareas wat ander stede regoor die globale Suide kan rigting gee vir die implementering van klimaatsveranderingstrategieë. Op grond van hierdie fokusareas, demonstreer die artikel dat daar aansienlike bestuur en ander hindernisse tot hierdie proses is wat oor veelvuldige skale strek, maar ook baie geleenthede soos goeie organisasie, deurlopende ondersteuning regoor verskeie departemente en skale en deursettingsvermoë wat ingespan kan word. Die bevindinge het beduidende praktiese en beleidsimplikasies vir die ontwikkeling en implementering van stedelike klimaatstrategieë en verskaf belangrike konseptuele insigte vir die bou van transformerende veerkragtigheid in uitdagende bestuurskontekste.

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**MORALO OA PHETOHO EA  
BOEMO BA LEHOLIMO OA  
DURBAN: BOITHUTO BO  
TLISITSOENG KE TEKOLO-BOTJA  
EA LEANO LE MORALO OA  
TS'EBETSO TSA 2021**

Mebuso ea litoropo e ntse e tsoela pele ho theha merero ea ho ikamahanya le phetoho ea maemo a leholimo. Leha ho le joalo, ho na le lingoliloeng tse fokolang mabapi le liphihlelo tsa phetoho ea maemo a leholimo metseng ea Afrika, haholo-holo mabapi le qalo, nts'etsopele le ho kena ts'ebetsong ha maano ao. Sena se ntse se tsoela pele ho sitisa matsapa a ho utloisisa le ho tataisa liketso tsa phetoho ea maemo a leholimo a litoropo ka hara kontinente. Sengoliloeng sena se thusa ho sebetsana le lekhalo lena ka ho fana ka temohisiso ea bohlokoa mabapi le menyetla le liqholotso tse fihletsoeng, le litharollo tse fumanoang tšebetsong ea ho theha le ho kenya tšebetsong Leano la Phetoho ea Maemo a Leholimo la Durban (DCCS) toropong ea Durban, Afrika Boroa. DCCS ea pele ea 2015 e ile ea shejoa ka 2020/21 mme tlhahlobo ea ts'ebetso le liphetho tsa eona e fana ka libaka tsa bohlokoa tse ka tataisang litoropo tse ling ho phatlalla le Global South le ho feta bakeng sa ho kenya tšebetsong maano a phetoho ea maemo a leholimo. Ho ipapisitsoe le libaka tsena tse tsepamisang maikutlo, sengolisa se bontša hore ho na le liitšitso tse ngata, tse kenyeletsang le tse pusong, tšebetsong ena e akaretsang litekanyo tse ngata. Hape le menyetla e mengata e kang tlhophiso e ntle, tšebetso e tsoelang pele ho kenyeletsa le mafapha a mangata le methati e ka sebelisoang. Liphuputso tse entsoeng li na le litlamorao tse kholo tsa nts'etsapele le ho kenya ts'ebetsong maano a phetoho ea boemo ba leholimo litoropong le ho fana ka maikutlo a bohlokoa a ho aha matla a phetoho maemong a thata a puso.

## 1. INTRODUCTION

Cities are faced with complex shocks and stresses from climate change and other challenges such as rapid urbanization, particularly in developing contexts, with vulnerable communities becoming increasingly exposed to multiple interacting shocks and stresses (Pelling *et al.*, 2018; Borie *et al.*, 2019). Cities are critical locations for climate adaptation and mitigation, with urban local governments playing a pivotal role in implementing plans and creating enabling environments

for supporting transformative climate action. Against this backdrop, it is imperative that cities globally shift from planning to actual implementation of climate change interventions by pursuing climate-resilient and just development pathways (Pelling *et al.*, 2018, IPCC, 2022).

Since the year 2000, urban local governments have become increasingly concerned with developing climate change adaptation plans. Indeed, there is now well-established literature on the challenges and opportunities to successful climate adaptation in cities across diverse contexts in the Global North and the Global South (Bulkeley & Broto, 2013; Ziervogel, Cowen & Ziniades, 2016; Sareen & Waagsaether, 2022; Berrang-Ford & Paterson, 2011). Despite this burgeoning literature, there is a lack of empirical studies that assess how local climate strategies and actions emerge in practice in the Global South, with consequent limited systematic knowledge on the evolution of urban climate agendas. In particular, there is limited information, for African contexts, related to climate change adaptation experiences, particularly in respect of moving from strategy development to implementation. This continues to hamper efforts to understand and guide city actions on the continent (Bindoff *et al.*, 2019; IPCC, 2022: 1243). This article addresses this gap by analysing the opportunities and challenges experienced, and the solutions found in the process of developing and implementing a climate change response strategy (DCCS) in the City of Durban (eThekweni Metropolitan Municipality), South Africa. The aim was to gain insights on climate change adaptation and mitigation from a review of the initial 2015 DCCS during its first five-year review period in 2020/2021. The 2015 DCCS review was important, as its outcomes were thematically analysed to provide useful climate change insights and focus areas that also underpinned the development of the detailed implementation plan to guide the City's comprehensive climate change response in the

short to medium term. The DCCS revision process and development of the 2022 DCCS implementation plan provide key learning outcomes for guiding transformative urban resilience building relevant to other cities across the Global South.

## 2. LITERATURE REVIEW

### 2.1 Transformative resilience, climate change approach, and urban governance

The concept of building resilience to climate change impacts has received major attention in academic and policy realms for several decades. Resilience is increasingly drawn on as a lens to shape urban governance and has informed the development of many climate change agendas and responses across all levels globally, including Durban. There are multiple diverse definitions and applications of resilience within the burgeoning literature (see Bahadur & Tanner, 2021).

According to the Intergovernmental Panel on Climate Change (IPCC, 2018a: 557), resilience can be understood as “[t]he capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation.” Technocratic and uncritical interpretations of resilience tend to focus strongly on recoverability and functional persistence rather than transformative elements, thereby risking the reinforcement of unsustainable and unjust systems (Pelling, 2010; Roberts *et al.*, 2020; Leck & Simon, 2018).

Recognising the above resilience critiques and based on mounting evidence and experience of climate change impacts, increasing inequalities, and other factors, eThekweni municipality has increasingly focused on creating new opportunities for building on existing efforts to support urban resilience towards more

transformative action (Roberts *et al.*, 2020). Based on their experience of driving Durban's climate agenda, Roberts and O'Donoghue (2013: 314) note that, rather than 'bouncing back' (technocratic) approaches to resilience, "[m]ore useful and practical in the long run is the idea of 'bouncing forward' or 'transformation', which implies a more radical shift to a new mode of urban planning, management and governance".

Roberts *et al.*'s (2020) critical reflections on Durban's resilience journey through participating in the 100 Resilience Cities (100RC) programme has significant implications for the City's approach to building transformative resilience through initiatives such as the DCCS. Their experience paints two contrasting approaches to developing urban resilience – one that represents the governing of resilience as transferred to cities 'from a distance' such as the dominant approach used by 100RC, and the other 'from within' that is tailored to local contexts, which Durban has prioritised (Roberts *et al.*, 2020). (Roberts *et al.*, 2020: 20) explain that the City's resilience journey has shown that "locally contextualized, participatory, negotiated and endogenous forms of urban resilience need to be developed if the practice of resilience building is to be transformative in complex urban contexts". These learnings have important implications for resilience and transformation theory and practice, including the development of the DCCS strategy.

Based on their study of Cape Town and Nairobi, Borie *et al.* (2019) explain that the way in which concepts such as 'transformative resilience' are understood has particular implications for the way in which risk and climate change impacts are governed. While the concept of 'transformation' also has diverse theoretical and practical origins, core aspects of transformational climate action include moving beyond incremental and *ad hoc* interventions to focus on systemic change and addressing root causes of vulnerability (Ziervogel *et al.*, 2016; Leck & Simon, 2018).

This system-wide transformative approach challenges the status quo in recognition of the complex multilayered challenges presented by climate change (Pelling, 2010). In Durban and other developmental contexts of the Global South, where social and environmental injustices prevail, transformation requires a reconfiguration of existing systems, governance structures, and state-society relations (Friend *et al.*, 2016; Douwes, 2018). This approach to transformative resilience building highlights the systemic and relational nature of resilience and the need for it to be predicated upon the particular historical and geographical context of a city.

## 2.2 Multilevel governance for transformative urban resilience

Developing and implementing an effective climate change strategy to build transformative resilience requires meaningful multilevel governance and multi-stakeholder approaches. Urban climate governance can be understood as the ways in which multiple state and non-state actors and institutions interact to develop and implement climate change goals, exert authority, and manage climate planning and implementation processes (Anguelovski & Carmin, 2011; Ziervogel *et al.*, 2022: 608). Governance also embodies institutional structures and mechanisms, "including the division of authority and underlying norms involved in determining a course of action" (Moser, 2009: 315). As such, governance incorporates diverse actors in decision-making, and recognises the multi-scalar dynamism between decision-makers, the contextual factors and power relations that influence decision-making (Leck & Simon, 2018; UN-Habitat, 2022). Implicit in the notion of multilevel governance is the notion of collaborative decision-making. Indeed, a defining feature of Durban's climate change journey has been its openness to participation and co-productive governance methods (Roberts *et al.*, 2020). Van der Heijden's (2019) large-scale

review of urban climate governance studies identifies several 'best practice'-enabling factors for effective governance of local climate action: supportive political and legal context; autonomy to make decisions and act upon them; access to funding; vertical and horizontal co-ordination; participation in capacity-building and learning networks; collaboration with, and participation of diverse stakeholders, and the presence of a local climate champion. Most of the studies were based in the Global North, where a great deal of research has focused and is by no means all-inclusive or sufficient (Van der Heijden, 2019). As evident from Table 2 and Section 5, these factors resonate closely with Durban's experience. However, in reality, they are often interlinked, and their boundaries blurred, with additional context-specific factors emerging.

Local authorities globally employ varied governance strategies for initiating institutional change for climate action. Based on their study of several Spanish cities, Sareen and Waagsaether (2022: online) conclude that to move from resilience to more transformative and systemic change, it is important for climate plans and processes to shift from being disparate and *ad hoc* – "tinkering around the edges" to become more strategically integrated into overall city planning and functioning. Relatedly, drawing on Hodson and Marvin's (2010) work, (Bulkeley, 2012: 83) argues that an increasingly dominant form of climate governance is "strategic urbanism", which represents "the growing alignment between addressing climate change and core municipal concerns and the more direct, political approach that municipal authorities and other urban actors have begun to take to the issue".

Alongside strategic urbanism and reflecting the changing nature of urban governance, a focus on 'enabling' as a mode of governing is becoming an increasingly significant part of municipal climate change responses in the Global South (Bulkeley, 2012; Bulkeley & Broto, 2013). Cities in the Global South are faced with challenges related

to political opposition and limited powers and capacity to provide infrastructure and services for adapting to climate change (Pelling *et al.*, 2018). As a result, they are increasingly turning towards the “enabling mode” as “one through which they can facilitate, co-ordinate and encourage the action of others through forms of partnership and engagement” (Bulkeley, 2012: 97). The formation of partnerships and networks, particularly with local consultants has been a hallmark of Durban’s climate change approach, including the development of the DCCS. Local ‘climate change champions’ often play a key role in establishing and driving such partnerships (Leck & Roberts, 2015; Ziervogel *et al.*, 2016) (see Section 5.2). Central to the enabling mode of governing is having a wider enabling environment, where supportive policy, legislative and other frameworks are in place.

### 2.3 Political, economic, and institutional impacts, and transformative urban resilience

The extent to which the governance and transformative resilience approaches described above are deployed in a city and their levels of success are dependent on political, economic, and institutional factors. As a result of extensive post-1994 policy and legislative revision, environmental and developmental issues in South Africa are now regulated by an advanced legal framework. The South African National Climate Change Response Policy (NCCRP) White Paper (South Africa, 2011) provides policy guidance for development and implementation of climate change initiatives from the short to the long term (up to 2050). The South African National Adaptation Strategy was approved in 2020, with the overall aim to help reduce the vulnerability of society, the economy and the environment to the impacts of climate change. Under the Disaster Management Amendment Act (Act no. 16 of 2015), all spheres of government are assigned responsibility to develop and invest

in disaster risk reduction and climate change adaptation interventions for their respective jurisdictions. Despite these legislative and policy advancements, considerable implementational and budget deficits remain. When legislated, the National Climate Change Bill (B9 2022) may help address such deficits, as it will provide a legal framework to respond to climate change impacts.

Post-apartheid local government is an autonomous government sphere that has been assigned extensive roles and responsibilities for driving the country’s development. Several local governments across the country such as Bergrivier and Johannesburg are addressing climate change, without specific national funds or instruction. Durban has included its Municipal Climate Response Plan in the City’s Integrated Development Plan (IDP)<sup>1</sup> since 2006, demonstrating an early and ongoing commitment to mainstreaming climate response in the City. Durban has made considerable developmental gains since the advent of democracy in 1994. However, these are at risk of being reversed, as the city is facing substantial socio-economic, environmental, and governance challenges. Furthermore, apartheid spatial planning that relegated historically disadvantaged communities to the outskirts of the City continues to compound inequalities with high levels of poverty and unemployment persisting in these areas. Climate change will compound and exacerbate these challenges. Sutherland *et al.* (2018) explain that, as with many cities in the Global South, Durban is characterised by many juxtapositions, being both highly informal and formal, traditional yet also modern, encompassing many injustices but also social transformation, together with environmental challenges buttressed with resilience building.

<sup>1</sup> Integrated Development Plans are a comprehensive planning tool to facilitate developmental local government.

### 2.4 Transformative resilience building in Durban

Over the past 20 years, the City of Durban has focused on setting up the appropriate policy, institutional, and governance structures to respond to climate change. Durban’s climate agenda and resilience journey has been well documented (Ziervogel *et al.*, 2016; Douwes, 2018; Roberts *et al.*, 2020). Durban was the first African city to approve its 1.5°C-compliant Climate Action Plan. The City is also well known for its mayoral leadership of international organisations such as ICLEI – Local Governments for Sustainability, and C40 Cities Climate Leadership group.

Durban’s ongoing progress and innovation in transformative resilience building through both adaptation and mitigation are underpinned by the willingness to address climate change among City officials and increasingly the municipality more widely. Broadly, adaptation refers to (in human systems) “the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities”, while mitigation refers to human interventions aimed at the reduction of greenhouse gases (GHGs) that drive climate change (IPCC, 2018a: 542, 554). Durban’s hosting of the United Nations 17<sup>th</sup> Conference of the Parties (COP17) raised awareness of climate change among residents, sector leaders, and municipal officials in the City, and secured political champions to lead the further development of Durban’s climate change work programmes such as the Durban Adaptation Charter (DAC) and the Durban Climate Change Strategy (DCCS).

The DCCS was jointly developed by the (then) Climate Protection Branch and the Energy Office and approved by the eThekweni Municipality Council in June 2015. The strategy outlines a municipal-wide approach to integrating climate change mitigation and adaptation responses into municipal functions and operations, viewed as a first for Africa. The 2015 DCCS was developed in consultation with stakeholders from various sectors, including organisations

representing informal settlement communities, parastatals and others. During 2020/21, it was subjected to its first five-year review. This review is also in support of the South African government's nationally determined contributions toward the Paris Agreement; the international treaty on climate change adopted at the 2015 United Nations Framework Convention on Climate Change (COP 21), and alignment with the impending South African National Climate Change Act. Based on the outcomes of the review, the 2022 DCCS was developed to move on from 'strategy' to 'implementation'.

### 3. STUDY AREA

Durban is situated on the east coast of South Africa in the KwaZulu Natal province and has the busiest port on the African continent (Figure 1). The City is governed by eThekweni Metropolitan Municipality and has a population of 3.9 million residents. The Municipality's 98km of coastline contains 18 major river catchments with 7,400km of streams falling within the 89,834 hectares Durban Metropolitan Open Space System (DMOSS) (see Figure 1). Annually, DMOSS provides residents with ecosystem services valued at R4.1 billion (Turpie *et al.*, 2017: 6), including protection from climate change impacts.

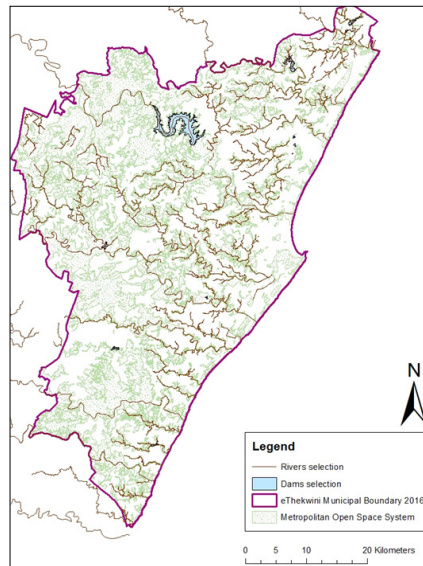


Figure 1: EThekweni Municipality showing municipal boundary, major river courses, and extent of the Durban Metropolitan Open Space System

Source: Author's own

EThekweni Municipality and its diverse communities are vulnerable to multiple environmental changes such as flooding, heatwaves, and extreme events such as storm surges. Durban experienced two extreme rainfall events in April and May 2022 that caused widespread flooding, resulting in serious loss of life and extensive damage to infrastructure and residential properties across the municipal landscape. These events further exemplify the key challenges the City faces in reducing climate change risks and the need for a transformative climate change strategy and supporting policies.

### 4. METHODOLOGY

Making use of qualitative participatory action research, this article reviews climate change focus areas from the 2015 Climate Change Strategy (DCCS) in the City of Durban, South Africa. Participatory action research allows for action by members of communities affected by that research to participate as co-researchers (Du Toit, Boshoff & Mariette 2017: 480). It also allows for content analysis (Farthing, 2016: 136; MacCallum, Babb & Curtis,

2019: 188) to identify and address gaps in the literature (Farthing, 2016: 66). In this article, ten climate change focus areas from the 2015 DCCS were reviewed during DCCS stakeholder consultation over five events (see Table 1). Using content analysis, the outcomes of these events were thematically analysed and grouped in four main themes including governance, partnerships, challenges, and funding, as the lessons learned that informed the development of the draft revised DCCS and a set of actions that underpin the 2022 DCCS Integrated Implementation Plan, the DCCS Monitoring and Evaluation Framework and the DCCS Communication Framework.

#### 4.1 Reviewing the 2015 DCCS

As noted, the 2015 DCCS underwent its first five-year review during 2020/2021. This review<sup>2</sup> and development of the 2022 DCCS Implementation Plan and Monitoring and Evaluation Framework (hereafter termed 'the work package') was led by a local consultant appointed through a competitive bid process, working with municipal staff within existing DCCS governance structures. Between August 2019 and June 2022, the authors did detailed documentation of each stage of the 2015 DCCS revision process and development of the DCCS Implementation Strategy. The authors were core members of the DCCS team and actively involved at each stage of the process, in their roles as key municipal officials and consultants contracted to facilitate the process as a service provider. The 2015 DCCS review process entailed three steps: review documents, stakeholder events, and critical analysis.

<sup>2</sup> A more detailed account of the methodology for reviewing the 2015 DCCS and developing the implementation plan and monitoring and evaluation framework can be found on the eThekweni Municipal website <https://www.durban.gov.za/pages/residents/climate-change-strategy> [Accessed: 22 September 2022].

#### 4.1.1 Documents

The first step was to review the latest climate change science (e.g., IPCC, 2018b; Bindoff *et al.*, 2019) and literature, with a view to understanding global climate risks for South Africa, and particularly Durban, and for this to guide the development of the revised DCCS and its key focus areas. Other key guiding documents were the South African National Government's Nationally Determined Contributions (NDCs) to the Paris Agreement,<sup>3</sup> national climate change policy, and the draft Climate Change Bill.<sup>4</sup> Furthermore, to raise local ambition in line with the target of 1.5°C average global temperature increase – the internationally recognised upper limit after which climate change risk escalates extremely dangerously (IPCC, 2018b) – eThekweni Municipality's Council adopted the Climate Action Plan (CAP) in 2019. The adaptation and mitigation actions set out in the CAP provide a pathway for Durban to achieve climate resilience and carbon neutrality by 2050. The DCCS and CAP are complementary and have been integrated into the DCCS Implementation Plan. Therefore, a key additional component of the review was to assess how to incorporate the CAP targets and actions into the revised DCCS and Implementation Plan.

#### 4.1.2 Stakeholder events

A series of public and internal stakeholder engagement events were conducted in step two.

Initially, an in-person workshop was held with municipal officials to present the methodology for the work package and identify key officials for participation. This was followed by a public in-person workshop in February 2020, where stakeholders were invited to comment on the methodology being proposed to revise the DCCS as well as provide initial suggestions on new or revised climate change interventions.

3 [https://www.dffe.gov.za/mediarelease/creecy\\_indc2021draftlaunch\\_climatechangecop26](https://www.dffe.gov.za/mediarelease/creecy_indc2021draftlaunch_climatechangecop26) [Accessed: 22 September 2022].

4 <https://www.parliament.gov.za/bill/2300773> [Accessed: 22 September 2022].

Table 1: Structure of the DCCS stakeholder consultation event process

Session	Sectors	Stakeholders	
		Frequency	Total
Initial Internal Stakeholder Workshop	All	74	74
Initial Public Stakeholder Workshop	All	65	65
Event 1: Enabling theme	Policy, legislation, and planning	14	42
	Governance (stakeholder structures, research and communication)	14	
	Financing (climate finance)	14	
Event 2: Cross-cutting theme	Economic development	10	28
	Vulnerable communities	18	
Event 3: Adaptation theme (1)	Biodiversity	13	31
	Food security	6	
	Health	12	
Event 4: Adaptation theme (2)	Sea level rise and coastal protection	7	30
	Water and sanitation	23	
Event 5: Mitigation	Energy	17	37
	Transport	10	
	Waste	10	
Total			307

This public engagement used a 'marketplace facilitation approach'<sup>5</sup> to facilitate inclusive input into the revised strategy. Due to the onset of the COVID-19 pandemic, all subsequent meetings were hosted virtually. Five public stakeholder events were then held online grouped into thematic areas. Participation was noted from a wide range of sectors, including non-government organisations representing different communities, including informal settlement dwellers, faith-based organisations and rubbish pickers, academia, state-owned entities, residents of Durban, and municipal officials.

During a February 2020 workshop, participants<sup>6</sup> (Table 1) reviewed the interrelated themes from the 2015 DCCS, including five adaptation themes (Biodiversity, Water, Health, Food Security, and Sea-Level Rise); three mitigation themes (Energy, Waste and Pollution, and Transport), and two cross-cutting themes (Economic Development and Knowledge Generation and Awareness). Key thematic outcomes from the workshop about targets, actions or sub-actions informed revision of the DCCS, drafted in April 2020. Following the February workshop, five themed stakeholder

5 In this instance, a station was established for each theme and 'shoppers' were invited to go from station to provide comments related to that theme, facilitated by a project member.

6 A list of participating organisations can be found at <https://www.durban.gov.za/pages/residents/climate-change-strategy>.

events (Table 1) were held to refine the updated list of actions and sub-actions and to begin drafting the DCCS Implementation Plan. The focus was on identifying relevant stakeholders for each theme and the status of each project. A prioritisation exercise was conducted in each session, where participants prioritised three projects per sector.

The outcomes of these events informed the development of the draft revised DCCS and a set of actions that underpin the DCCS Integrated Implementation Plan. By contrast to the 2015 version, the revised DCCS includes CAP targets and emphasises 'implementation'. A major change in the revised strategy is the inclusion of an 'enabling theme' consisting of the policy, legislation, governance, and finance sectors.

#### 4.1.3 Analysis

Step three was to analyse and critically reflect on the 2015 DCCS process. The authors' critical documentation of the 2015 DCCS process, as well as qualitative data such as minutes and relevant documents from stakeholder events were analysed and critically reflected upon in a series of monthly project steering committee meetings, and in a writing workshop to identify key thematic areas of lessons learnt. Through content analysis (Farthing, 2016: 136), key themes were broadly grouped into different learning areas, including governance, partnerships, challenges, and

funding, from the project initiation phase through to developing the monitoring and evaluation system for the implementation plan and further divided into subthemes as presented in Table 2. Arguments presented in this article are based on inputs and knowledge from diverse key stakeholders who were engaged in the process. This reflexive and novel approach is critical for adding empirical and grounded insights to contribute to the body of empirical studies being produced on urban resilience globally (Roberts *et al.*, 2020).

## 4.2 Development of the 2022 DCCS

As part of the review process, a detailed 2022 DCCS Implementation Plan, monitoring and evaluation framework, and communication framework were also developed to guide the City's comprehensive climate change response in the short to medium term. Principal focus for implementation is on risk reduction and improving adaptive capacity and transformative resilience across the City, particularly for marginalised and vulnerable communities.

### 4.2.1 DCCS Integrated Implementation Plan

The 2022 DCCS Integrated Implementation Plan is 'integrative', because it combines the four themes outlined in Table 1 and draws on the targets and actions from the Durban CAP, thereby streamlining the plans. As detailed below, the DCCS Implementation Plan includes a number of components such as a monitoring and evaluation framework and associated reporting tool, as well as a climate change communication framework and portal.

The initial draft DCCS Implementation Plan consisted of over 300 projects; yet there was some duplication and others were beyond the scope of the municipal strategy. A process to refine, combine, and prioritise projects was undertaken, leading to a consolidation of projects for the 2022 DCCS Implementation Plan into 122 projects. This process was done through online engagements, where municipal officials undertook

prioritisation processes through scoring projects according to impact, budget, urgency, and effort. Effort refers to the level of complexity and time to implement a particular project. The result was a list of prioritised projects<sup>7</sup> for each sector based on a pragmatic approach that is robust enough to mitigate against the loss of key projects, but also able to identify gaps in ability to implement such as lack of ownership of particular projects.

The final steps entailed collecting specific details for the projects across priority categories. This information provided the substance of the implementation plan and included data such as time frames, budgets, and ownership of the project. For each sector, between two and ten officials participated in the process to refine projects, but one municipal official was chosen for each project to represent that project in reporting. To support streamlining, one of these officials was identified for each project according to their roles and expertise, and they populated each project with the required information.

This process was time intensive, and many officials did not respond to the data-collection request. To overcome this, follow-up email correspondence was sent, and 18 individual interviews (meetings) were convened with project contacts. Material was also collected electronically outside of meetings. The outcome from this process was a draft detailed Integrated Implementation Plan for the DCCS and CAP.

### 4.2.2 DCCS monitoring and evaluation framework

A monitoring and evaluation (M&E) framework was developed to establish a baseline from which to track progress of projects, programmes, and targets in the DCCS Implementation Plan. Several key principles were adopted for designing the DCCS M&E framework. These principles are based on best practice examples drawn from a review of key literature (McKenzie & Morgan, 2020). These include

using Microsoft Excel, already used by the municipality as a default for data management and developing the reporting tool explicitly for the DCCS, but in a way that also meets broader institutional reporting requirements. Additional principles included selecting indicators to match specific actions and sub-actions of the DCCS for tracking inputs, outputs, outcomes, and impacts; conducting a capacity assessment and training to support reporting, and designing an annual review of the tool. When implemented, collection of key data was hampered by the low level of response by officials driven by reporting fatigue and the punitive nature of existing reporting processes required by the South African Municipal Systems Act (Act 32 of 2000) (see Table 2).

To overcome this barrier, the DCCS reporting tool was further revised to align with current municipal reporting processes, using the City's Enterprise Performance Monitoring Application (EPMA), but with the key differentiation of adding the 2022 DCCS outside of the core Service Delivery and Budget Implementation Plan (SDBIP). The benefit of this approach is that officials are familiar with the EPMA, instead of having to learn a new reporting system, which helped secure their buy-in to this process.

### 4.2.3 DCCS communication framework

Education and awareness are integral components of supporting climate action among local communities. To address the dearth of easily accessible climate change information on the municipal website, a dedicated communication portal was created to help build the capacity of Durban's diverse communities and enable them to better respond to climate change. The portal, which is currently being uploaded onto the Municipal website, is part of the 2022 DCCS communication framework, which includes a detailed communication plan. The DCCS communication framework is supported by a dedicated communications officer

<sup>7</sup> A list of prioritised projects can be found at <https://www.durban.gov.za/pages/residents/climate-change-strategy>.

in the Energy Office, and the City's Communications Unit.

## 5. RESULTS AND DISCUSSION

Climate change planning at the municipal level is a complex and difficult undertaking. Municipalities have many competing priorities with often limited budgets and resources. These challenges are exacerbated in the Global South, where often pressing social and economic issues force governments to prioritise short-term and immediate problems with climate change response, often perceived as a future concern. Through the lens of strategic urbanism (Bulkeley, 2012), eThekweni's experience with the DCCS has revealed the criticality of having a clear strategy in place outlining the municipality's climate change response and mainstreamed into other municipal planning processes. However, Durban's experience has shown that simply having a climate change strategy in place is not enough. It is equally important to ensure that the steps to achieve climate change response outcomes are clearly defined in a detailed implementation plan underpinning the strategy. The success of the implementation plan, in turn, depends on the level of buy-in by municipal leadership and those stakeholders that are ultimately responsible for implementing the various actions and thus need to be identified at the outset and committed to ensuring their achievement. Table 2 provides a summary of the key barriers and drivers, and lessons learnt from the process of revising the 2015 Durban Climate Change Strategy and developing a detailed implementation plan, and monitoring and evaluation framework. Based on this table, four thematic areas (governance, partnerships, challenges, funding) are identified and critically considered in the ensuing discussion as the key learning outcomes in resilience building that could guide transformative urban resilience.

### 5.1 Governance as a risk and strength

Much focus has been on ensuring that the appropriate multilevel governance structures are in place for the DCCS. Because of the silo-based organisation of line functions in eThekweni Municipality, there has historically been poor coordination of the implementation of climate change response in the City. A key governance lesson in revising the 2015 DCCS relates to creating systems for collaboration between different sectors, in order to support effective multilevel governance both vertically and horizontally, as described in Section 2.2. The message that the impacts of climate change affect all sectors and the need for coordinated responses across these sectors emerged as common theme in discussions with various municipal line departments during the development and revision of the 2015 DCSS. This outcome highlights the increasing recognition of the need for cross-departmental and cross-sector collaboration under a multilevel and strategic governance framework (Bulkeley, 2012).

Since the establishment of the Municipal Climate Protection Programme, much effort has been made to support capacity development of the City's professional staff for addressing climate change through training and other measures (Roberts *et al.*, 2015). This resulted in a set of professionals embedded within the various environmental functions of the City who had become climate change leaders and champions in their own respective fields. This dedicated and broad-based set of champions underpinned Durban's early opportunistic and experimental climate change adaptation work. These champions were the main driver for the development of the 2015 DCCS, formed the core of the DCCS Subcommittee, and supported the recent strategy revisions. A key lesson that resonates closely with related studies (e.g., Anguelovski & Carmin, 2011; Van der Heijden, 2019) and a main additional reason for including the enabling theme in the revised DCCS is that, in order

for climate champions to have sustained impact, including in their absence, there is a need for a broader enabling policy and political environment to support ongoing traction in advancing transformative resilience in the City. Taylor, Siame and Mwalukanga's (2021) study similarly highlights the centrality of an enabling environment as a basis for integrating climate risks into strategic urban planning in Lusaka, Zambia.

A key aim in developing the DCCS and its governance framework has been to coordinate and integrate climate change work across line functions, avoid duplication, and better manage funding for related projects. As similar studies such as Sareen and Waagsaether's (2022: 2) analysis of governance transitions to sustainability in two Spanish cities have shown, progress towards more systemic transformative resilience can be supported by shifting climate plans and processes from being fragmented and *ad hoc* to being more integrated into overall city planning and functioning.

The DCCS ultimately required political approval through committees and a meeting of the full Council. This demonstrates a considerable level of leadership and strategic political support for an integrative and meaningful response to climate change across governance scales (Douwes, 2018). This, in itself, was not deemed to provide sufficient top-down momentum for implementation but having political champions in internationally recognised positions (e.g., Mayor Kaunda was, during this period of review, C40 Regional Chair representing Africa) gave the DCCS the political support needed to get all administrative leaders behind the DCCS. The City is increasingly engaging with strategic urbanism as a form of climate action with growing alignment between addressing climate change and core municipal concerns and direct interventions and support by political leaders (Bulkeley, 2012).



Table 2: A summary of the key barriers and drivers, and lessons learnt from the process of revising the Durban Climate Change Strategy, developing a detailed implementation plan, and monitoring and evaluation framework.

DCC phase	Focus area	Observations	Lessons learnt on barriers and drivers
Project initiation	Role of intermediaries for climate change interventions	Using local external consultants to manage the process required a substantial investment by Durban City, but resulted in a dedicated team driving the process to completion	The municipality has benefited from using local consultants with in-depth local knowledge and ongoing presence in the City to support the development of the DCCS. Skilled and experienced municipal staff facilitate the successful collaboration with competent service providers
DCCS revision	Creating an enabling environment	Including an "Enabling" theme in the DCCS has enhanced the strategic nature of this document	To enhance implementation of the DCCS, it has been necessary to prioritise enabling actions such as policy development, strengthening capacity, and transdisciplinary research to guide implementation
	Public stakeholder engagement process: a) Stakeholder expertise	Stakeholders typically had narrow interest areas during public engagement processes	Stakeholder consultation processes need to be designed to facilitate broad participation levels
	b) Cost of consultation	There is a trade-off between the need for more widespread consultation and its associated high costs	Creative solutions are required to overcome barriers to participation of marginalised communities in stakeholder processes. For the DCCS, a key facilitative driver was ensuring community representation through engaging with civil society groups
	c) Stakeholder ownership	A lack of ownership emerged in Durban residents and the private sector concerning DCCS actions	Greater effort is required on communicating with, and developing participatory structures so that the responsibility for implementing climate action is taken up beyond the municipality
Governance framework review	Institutional coordination	Silo-based organisation for service delivery has led to weak coordination in adaptation and mitigation response	Effective leadership of a city's climate change function requires a diverse and multi-sector knowledge base that accounts for diverse perspectives in a common purpose
	Climate change champions	Municipal climate change champions have emerged over the past decade and form the core of the Subcommittee implementing the DCCS	Fostering a set of "embedded" climate change champions is a key enabler in mainstreaming climate change into municipal operations and breaking down silos
	Transdisciplinary research	A dedicated climate change transdisciplinary research programme alongside the DCCS is essential for providing information to guide implementation and for developing capacity to implement	To facilitate effective and appropriate climate change research, it will be necessary to overcome funding barriers and embrace opportunities such as pursuing innovative approaches (e.g., EPIC)
	Institutional support	Strong commitment by senior municipal leadership within appropriate governance structures is important for coordinated support for climate change implementation.	Senior political and administrative leadership plays an active role in driving the City's climate change response. Interactive platforms with the public are required to drive decision-making across sectors and break down municipal silos
	Engaging with international organisations	Durban has received significant support from diverse international organisations, who have helped drive the City's climate agenda	Pursuing partnerships with international organisations helps drive the implementation of the DCCS by alleviating capacity and funding constraints
Implementation plan development	Trade-off between science and reality	Many proposed climate change response targets were viewed as unrealistic, despite being required by science	Committed senior leadership for addressing high-level targets is needed to transcend "business as usual"
	Municipal mandates	Municipal officials noted that specific required interventions would need national level implementation rather than at a municipal level	A vertically and horizontally coordinated response between spheres of government and other mandated bodies is required for the implementation of climate actions
	Additional responsibilities	Climate change response was typically viewed as a new and additional responsibility	Current roles and responsibilities require revision to support mainstreaming of climate change into municipal functions; senior leadership should acknowledge the extra responsibility of implementing climate change, and respond accordingly
	Project custodianship	It was difficult to identify the appropriate project owners for some projects, in particular those with a cross-sectoral nature	It was necessary to identify climate change response areas without 'owners' for allocation to existing roles or new positions to assume these responsibilities. If there are no resources to create new positions, then existing roles require adjustment to also prioritise emerging climate change roles
Developing the DCCS monitoring and evaluation system	Baseline data collection	There was often a lack of climate change baseline data available for projects	There is a need for additional resources to set up a support system to work with individual climate change project managers to develop realistic and accurate baseline information
	Reporting fatigue	Concerns were raised that the DCCS implementation plan would add to municipal officials' existing significant reporting requirements	Integrating reporting for the DCCS into existing reporting systems is a key driver that helped alleviate concerns about reporting burden
	Reporting fear	Existing reporting processes are punitive in nature. Officials were concerned that DCCS reporting would create issues when reporting failures, particularly when implementing complex projects across multiple sectors	Using the existing municipal reporting system, but adding DCCS projects outside of the core scoring system has alleviated this concern, allowing for failure and learning sometimes associated with climate change adaptation
Finance support	National funding opportunities	There are limited opportunities for financing climate change interventions through national conditional and non-conditional grants	Introducing a dedicated resource in the municipality to track, coordinate, and apply to funding grants for climate change projects can help overcome funding barriers
	International funding opportunities	International financing presents opportunities through climate change project-preparation support	There is a need for a dedicated resource in the municipality to track, coordinate, and apply to international grants for climate change projects
	Climate finance capacity building	Climate finance training courses and ongoing support help develop project ideas into detailed project concepts that can be applied to financing opportunities as they emerge	Hosting regular climate finance training workshops with climate change project managers can address capacity barriers by supporting the conceptualisation and financing of projects

## 5.2 Developing partnerships for climate change responses

Section 2.2 reflected on the increasingly deployed enabling mode of multilevel governance, which describes how cities globally are increasingly forming partnerships and collaborations to address climate change (Bulkeley, 2012: 97). The formation of partnerships and networks has been a hallmark of Durban's climate change approach. Since 2000, municipal officials have increasingly joined local to international formal partnerships and social networks supporting climate agendas. For example, the Durban Research Action Partnership (DRAP), which was established in 2011 by eThekweni Municipality and the University of KwaZulu-Natal, promotes local capacity and knowledge generation that supports implementation of the DCCS. Such initiatives have been key drivers of the municipal climate agenda.

At the core of DRAP is the City-funded Global Environmental Change (GEC) transdisciplinary research programme. Funding is provided for postgraduate students and early career researchers to undertake transdisciplinary research with a focus on climate change. To date, the City has invested R7.5 million in the programme and a further R3 million in the Community Reforestation Research Programme. GEC funds also support capacity building through work-experience opportunities for students and early career researchers. Furthermore, implementing novel approaches such as Educational Partnerships for Innovation in Communities (EPIC)<sup>8</sup> has supported the efficient use of limited resources and strengthened City-community relations.

Beyond DRAP, Durban has developed numerous partnerships across scales that have been major drivers of its climate change work, particularly through the City's role as the Durban Adaptation Charter (DAC) Secretariat, which has seen Durban engaging in peer-to-peer learning exchanges with dozens of African

cities (O'Donoghue *et al.*, in prep-b). This has resulted in rapid growth in capacity and institutional readiness of participating cities in addressing climate change adaptation. Other significant partnerships include the Central KwaZulu-Natal Climate Change Compact (CKZNCCC) (Municipality, 2021a), the KZN Sustainable Energy Forum (KSEF), and the Durban Climate Change Partnership (DCCP). Enabling modes of governing and strategic urbanism characteristic of Durban's climate response and development of the DCCS often demonstrate innovative governance and partnering to support transformation in addressing the increasing impacts of climate change (Bulkeley, 2012). However, Durban's experience has shown that the establishment and maintenance of partnerships are challenged by weak commitment and governance structures and a lack of effective leadership and access to funding (Roberts *et al.*, 2015).

Section 4 highlighted that a significant change in the revised DCCS was the introduction of an enabling theme. This includes sub-themes of policy, legislation and planning, finance and governance that facilitate enabling modes of governing and help support collaboration and establishment of partnership arrangements. These were introduced with the recognition of their centrality to the overall success of the DCCS and to overcome the challenges experienced with partnership arrangements in the City.

## 5.3 Meeting the challenge of moving from strategy to implementation

Based on the Durban climate change team's experience as the DAC Secretariat and participation in international partnerships (O'Donoghue *et al.*, in prep-a), the two main challenges frequently articulated by officials at the frontline in responding to climate change are skills and capacity constraints, as well as limited access to finance. As shown in Anguelovski and Carmin' (2011) and Van der Heijden's (2019) papers, these two key issues are also commonly highlighted in urban

climate change studies in both the Global South and the Global North.

During the initial phases of the DCCS review and development of the implementation plan, it became evident that the municipality lacked the staff capacity (in terms of time available and skills) to drive the process internally. eThekweni Municipality committed R3.6 million towards securing a local consulting company to lead the process of reviewing the 2015 DCCS, integrating the DCCS and CAP, and developing an implementation plan. Durban has a well-established network of local, committed, skilled, and knowledgeable environment and climate change service providers. As a result, and in contrast to international consultants, the local contractor assigned through the competitive procurement process had a deep understanding of, and was able to operate effectively within the local context and be present across the three-year period of the contract. A DCCS Project Steering Committee (PSC) was established consisting of the consulting team and municipal officials from the Climate Change Department. The PSC was the main driver for reviewing the 2015 DCCS and developing the subsequent detailed implementation plan. Without the support from the external consulting team, it is unlikely that the level of detail in the implementation plan and buy-in from key stakeholders would have been achieved.

Developing and implementing a municipal-wide strategic response to climate change is beyond the means of many, if not most of the line functions responsible for climate change in African cities (Roberts *et al.*, 2013). The high costs of extensive consultation processes also present a considerable barrier. As a result, local authorities have often relied on international funding for external consultants to undertake climate change planning and develop resilience agendas (Chu, 2018). In this case, Durban had the internal budget available to procure the services of local consultants to assist with this process. This helped ensure that the DCCS process

8 <https://www.epicn.org/> [Accessed: 22 September 2022].

underpinning Durban's pathway to transformative climate resilience was locally grounded and informed, while the municipality directly shaped and drove the process from within, rather than being externally directed. A further key message is that this helps ensure that paths to transformative resilience are locally led and appropriate (see also Roberts *et al.*, 2020). While such internal funding is not widely available to local governments across the Global South, the lessons apply more broadly to engaging with transnational actors and the local management of international funding. As Chu (2018) explains, based on the experience of three Indian cities, while international funding and actors remain critical to advancing urban climate agendas in the Global South, it is important to ensure local ownership and authority to avoid dependency and constraints on local governance.

Once the strategy-revision process was underway, a significant issue that emerged was how best to ensure the engagement of City officials and Durban residents in driving the strategy in the long term. During the public consultation events, it became evident that participating Durban residents often have very specific areas of interest and thus were less engaged with the wider strategy and its interlinkages across sectors. Stakeholders were also often more willing to provide comments than assume responsibility for implementing actions. To overcome these barriers, participants were encouraged to think beyond their own areas of interest, by engaging with wider areas of the strategy and the implementation plan, by encouraging them to move to other stations in the marketplace methodology employed. To move beyond simply commenting on issues, stakeholders were requested to identify specific entities or individuals who could take on responsibilities for certain activities listed in the implementation plan. These were then discussed further and verified to ensure approval by key stakeholders. The municipal project prioritisation exercise outlined in Section 4 was an

important tool for ensuring inclusivity and openness in stakeholder engagement for revising the DCCS.

A further key enabler for implementation was the transition of key stakeholders' attitudes to the plan, once implementation commenced. When baseline data for the different projects listed in the implementation plan was requested, the plan transitioned from being viewed as a theoretical plan on paper to the need for action by stakeholders. This drove project leads to provide practical and relevant feedback on the different projects. Prior to this baseline data-collection step, the municipal climate change team drafted many of the detailed data points in the implementation plan. However, once the implementation plan was initiated, the buy-in of relevant project stakeholders noticeably increased. Tailoring the projects to be more relevant to the daily work of responsible officials, but highlighting linkages across programmes and sectors, helped the process of buy-in. Thus, a key overall lesson learnt, which was also highlighted in related literature (*e.g.*, Castan Broto & Westman, 2019), is rather than being viewed in isolation, it is critical to focus on the multifaceted interlinkages between strategies and outcomes and the opportunities to address them simultaneously.

#### 5.4 Securing funds for implementation

Securing funds for developing climate change strategies and actions is particularly challenging for many resource- and capacity-constrained municipalities of the Global South. This presents a major barrier to advancing urban resilience agendas (Bahadur & Tanner, 2021). A final key learning area resulting from the DCCS is the importance of prioritising efforts to source funding for the implementation plan and the role of intermediaries (appointed consultants) in supporting this. One of the core responsibilities of the consulting team was to identify potential local and international funding sources for DCCS activities. This proved to be a key driver for

implementation, as the consultants were able to assist the municipality to source significant additional funding, particularly through various international climate financing streams. It clearly highlighted the importance of dedicating resources to identify and support applications for additional climate finance. As a result, securing capacity for this role is one of the core projects in the DCCS Implementation Plan. Municipal officials from the DCCS Subcommittee were supported in developing funding concept notes through the climate finance training course<sup>9</sup> developed by the consultant (McKenzie *et al.*, in prep). Several project concepts have already successfully acquired financing, with others in the process of securing further funding.

## 6. CONCLUSION

This article focused on understanding lessons learnt in the process of reviewing the Durban Climate Change Strategy and developing a detailed implementation plan that are relevant to municipal authorities, climate change practitioners, and other stakeholders in the Global South. The article provided a summary of the methods used during the strategy review process, followed by a critical discussion of the principal lessons learnt through this process in terms of enablers and barriers, with a view to adding insight into the complexity of municipal climate change planning in the Global South.

The process of reviewing the DCCS and developing the Integrated Implementation Plan has faced significant barriers such as the onset of the COVID-19 pandemic and consequent budget restrictions. However, by partnering with excellent service providers, a committed climate change secretariat and the engagement of City-wide champions underpinned by an enabling environment and

<sup>9</sup> The training course is accredited for continuous professional development within the South African Council for Applied and Natural Science Professionals. A Climate Emergency Training Course was also developed and similarly accredited, including with the Engineering Council of South Africa.

strategic urbanism, the journey was successfully completed with Council approval of the DCCS on 23 June 2022. The DCCS is highly significant for supporting Durban's journey towards transformative resilience, as it provides a roadmap for the Municipality of appropriate adaptation and mitigation responses for addressing climate change and clearly specifies the roles and responsibilities of various stakeholder groups for implementation. Following council approval, the next phase is implementation, which entails multiple levels of complexity beyond those experienced with strategy development. However, the DCCS and the lessons learnt and key messages through its development provide important foundational principles for supporting implementation.

The findings presented in this article have significant practical and policy implications and provide important conceptual insights for building transformative resilience in challenging governance contexts. These key messages and lessons learnt provide a unique and critical contribution to the literature, as they have been gained primarily through practical experience by key authors positioned within the relevant institutions and process of developing the DCCS rather than as external observers. This article contributes to the literature in the Global South and globally about how the development of climate agendas and conceptual ideas concerning urban transformative resilience emerge in practice through complex configurations and processes.

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