ETHEKWINI MUNICIPALITY

DCCS ANNUAL REPORT 2020/21

DURBAN CLIMATE CHANGE STRATEGY

H&M
NRB

Executive Summary

The Durban Climate Change Strategy (DCCS) was approved by the eThekwini Municipal council in June 2015. This was followed by the approval of the Durban Climate Action Plan (CAP) in October 2019. The eThekwini Municipality has recently completed the process of the first five-year review of the DCCS and has developed a fully integrated implementation plan for the DCCS (and the Durban Climate Action Plan), that will take the strategy from "planning to implementation". This process of developing the implementation plan included several components:

- Reviewing and updating the DCCS;
- Multiple external and internal stakeholder engagement processes;
- Developing theme-specific implementation plans across different sectors;
- Developing a monitoring and evaluation framework and reporting tool; and
- Developing a communication framework.

The process to review the DCCS and develop the implementation plan was started in August 2019 and concluded in June 2021. Currently we are preparing for the implementation of the plan by working with line functions to populate the Monitoring and Evaluation (M&E) framework with baseline data in preparation for our process to seek Council approval for the DCCS Implementation Plan and M&E Framework. This report provides an update of the progress made during the 2020/21 financial year.

Mayor's Foreword

Cllr Mxolisi Kaunda - Mayor, eThekwini Municipality
Chair of EMCCC

> Collectively, implementation should help us develop our city in a way that is consistent with a global ambition to keep warming to no more than 1.5 °C, whilst pursuing a just transition for our City's communities.

The 2020/21 financial year continued along similar lines to 2019/20, with Covid-19 being the most immediate and pervasive threat to the well-being of residents of Durban and the City's economic status. Fortunately, over time we have developed non-pharmaceutical interventions that are helping to curb the spread of the virus, during waves, in our City. Together with the roll-out of the vaccination programme, it is hoped that the 2021/22 financial year will bring with it a rebound from Covid-19.

Despite the setbacks of Covid-19, the Climate Change Secretariat has managed to complete the DCCS review and produce an integrated implementation plan for our two key climate change strategic documents, the DCCS and the Durban Climate Action Plan. Collectively, implementation should help us develop our city in a way that is consistent with a global ambition to keep warming to no more than 1.5 °C, whilst pursuing a just transition for our City's communities. As the leadership of this organisation, we will make every effort to ensure that the next five-year review of the DCCS reports excellent progress in pursuing our climate change ambitions. During the financial year we continued to head the eThekwini Municipality Climate Change Committee and have noted progress in various work streams. These include securing eThekwini Municipal Council's approval for two key policy documents related to the City's mitigation work, these being the eThekwini Municipality Renewable Energy Strategy and the Green Building Incentive Policy. Both of these programmes, when successfully implemented, will help the City to achieve its Green House Gas (GHG) emissions reduction targets in support of South Africa's Paris Commitment.

During the financial year, the City has managed to produce a seminal document supporting investment in its Transformative River Management Programme (TRMP). The TRMP brings communities, the private sector and government together in partnerships to manage our extensive water ways to improve the ecosystem service benefits we get from our rivers e.g. flood protection and water supply, whilst creating employment in the communities where it is most needed. This represents a development model that can be applied across Africa. The TRMP cost-benefit analysis has shown positive return of investment in such a programme, and I look forward to overseeing the City's implementation of TRMP.

The 2021/22 financial year is shaping up to be a busy one indeed, especially with local government elections on the horizon. By all working together within the new sitting of our Council we can secure successful service delivery in our communities, a rapid rebound from Covid and a just transition to our new climate-ready world.

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1. Introduction

1.1. What is climate change

Climate change is the long-term change in temperatures and prevailing weather patterns in an area of, or the planet, as a whole. It is caused mainly by human activity, such as the burning of fossil fuels that release greenhouse gases into the air that act as a blanket to trap heat from the sun's rays within the earth's atmosphere. This leads to an increase in global average temperatures called global warming, which causes unpredictable, damaging weather events such as heavy rainfall and intense storms. Climate change is causing species extinctions, droughts, crop losses, increases in alien invasive vegetation, pests and diseases and the melting of polar ice that is accelerating sea-level rise. The changes in the earth's climate are happening rapidly due to the ever-increasing levels of greenhouse gases in the atmosphere that are being emitted.

1.2. Brief history of climate change work in Durban – Mitigation and Adaptation

The initiation of the eThekwini Municipality Climate Protection Programme in 2004 led to the initiation of various adaptation and mitigation projects, and the formation of the Climate Protection Branch (CPB) and Energy Office (EO) respectively. Milestone projects included Climatic Future for Durban (2004-06), eThekwini State of Energy Report (2006), Energy Strategy (2007), Integrated Assessment Tool (2007-10), Municipal Adaptation Plans (2008) and Durban Adaptation Charter (2011).

The Municipal Adaptation Plans Technical Task Team (MAPTTT) began in 2013, originally to report within the City's Disaster Management Advisory Forum. The MAPTTT was converted into the Durban Climate Change Strategy TTT when the DCCS was approved by Council in June 2015 and was followed by the establishment of the eThekwini Municipality Climate Change Committee (EMCCC) by (then) Mayor James Nxumalo. Following this, in 2016 the DCCS Implementation Framework was developed and comprised of the EMCCC, TTT and a subcommittee who implemented decisions from the above committees. This status quo has continued to date.

The *Durban Climate Change Strategy* was approved by Municipal Council in 2015 and the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC GHG) Protocol was adopted in 2016. In that year, (then) Mayor Zandile Gumede was elected C40 Vice-Chair representing the African continent catalysing a range of C40 special initiatives in the City, and which are reporting in this annual report. To address the need for rapid transformation, the eThekwini Municipality, with support from C40 Cities Climate Leadership Group, developed the Durban *Climate Action Plan* (CAP) that builds on the 2015 Durban Climate Change Strategy. The goal of the plan is to ramp up ambition and action that is required to limit global temperature increase to 1.5°C, and thereby limit impacts facing our more vulnerable communities. The CAP was adopted by Council in 2019.

1.3. Climate change impacts in Durban

In South Africa, mean annual temperatures for the past five decades have increased by at least 1.5 times the observed global average of 0.65°C. The average annual temperature increase in Durban is expected to be between 1.5°C and 2.5°C by 2065 and increase between 3°C and 5°C by 2100. Heat stress could cause health issues, ranging from lower labour productivity to serious diseases and can even cause death. Heat stress is likely to impact most upon the elderly and vulnerable communities. This is worsened by the urban heat island effect experienced in cities. Drought is another risk that the city can face as the frequency of dry years (less than 700mm of precipitation) is projected to increase to three events every ten years. Evaporation rates will go up between 3% to 6% depending on global greenhouse emissions. As drought cycles become more intense, increasingly severe water shortages will result, affecting the health and wellbeing of the city's residents.

Besides droughts, there will also be higher intensities of rainfall events/ storms. Current rainfall intensity of 78 mm over a 24-hour period with a return period of 10 years is projected to increase by 22mm in 2050. The flood risk is increasing in frequency and poor communities in flood zones are especially exposed. Built infrastructure is also vulnerable. The annual cost implications for the well-being of municipal residents and coastal users is estimated to reach R224 million by 2040. Declining river water quality will affect coastal tourism and property values, as well as the ability of riverine communities to access and use rivers for household water provision, crop irrigation, and recreation. Local sea-level rise is also projected due to the heating and expansion of the Agulhas Current, which is known to have a controlling influence on Durban's climate. Tidal records show a linear increase in sea-level for Durban, increasing by 2.7 mm/year. Durban's coastline, which is a highly developed area may face sea level rise ranging from 0.3 to 117 mm, (and further up to 375mm with higher projections), for the low- and high-emissions scenarios respectively. While this does not sound like much, the damage caused during extreme events, like during the March 2007 equinox storm, provides evidence of the need to plan for sea level rise and protect or move infrastructure that is vulnerable along the coastline.

1.4. Brief summary of what climate change work is reported for 2020/21

During the 2020/21 financial year, eThekwini Municipality continued to be impacted by new waves of Covid-19, which affected municipal levels of productivity and income. Implementation of the Durban Climate Change Strategy during the financial year was not immune to these budget shortages. Despite these challenges, significant progress has been made towards establishing a Climate Change Department in the city. The Department will be formed from the Climate Protection Branch (adaptation) and Energy Office (mitigation), both of which are currently in the Environmental Planning and Climate Protection Department (EPCPD). As part of the City's implementation of its Covid-19 economic recovery strategy, City leadership has had to reprioritise staff funding towards critical posts. As a result, the funds required to fill the vacant Climate Protection Scientist post were redirected towards the Deputy Head post.

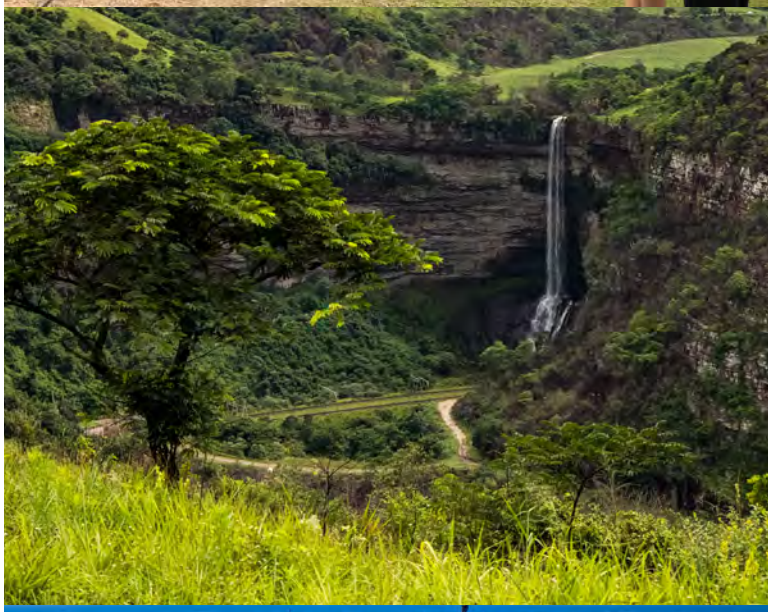
The process to review the 2015 DCCS and develop an integrated implementation plan for the DCCS and Climate Action Plan was completed by end of financial year. The DCCS is divided into enabling and implementation themes, and programmes and projects have been assigned to municipal line functions. Currently the Climate Secretariat is busy embedding these projects into line functions to establish the monitoring and evaluation framework, which will include a reporting tool and dashboard for the DCCS governance structures' oversight.

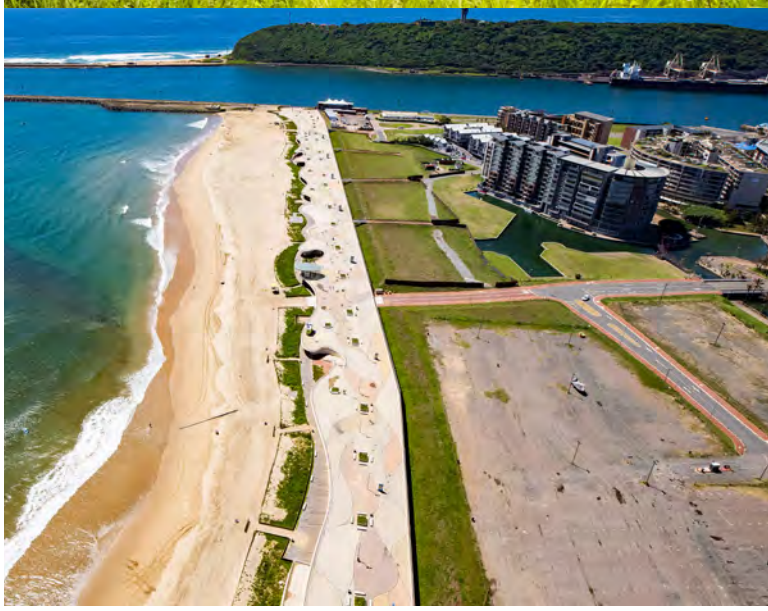
Following the completion of the review of the DCCS, the Climate Secretariat undertook the task of reviewing the governance framework to better streamline municipal decision-making at the level of the Technical Task Team (TTT) and its connectivity to the political eThekwini Municipality Climate Change Committee. Mayor Kaunda continued to lead the EMCCC, which managed to sit during the year, even with the demands placed on city leadership by the Covid-19 crisis. The TTT Subcommittee continued to meet every two months and were instrumental in making progress with the development of the DCCS implementation plan. The Climate Secretariat continued to support these committees by providing secretariat services to the EMCCC, TTT and its subcommittee, and continued to drive the development of the DCCS implementation plans through monthly steering committee meetings with the appointed service provider.

During the financial year, the City published its 2019 greenhouse gas (GHG) emissions inventory which reported 29.2 million tonnes CO_2e, slightly up from the 2018 inventory's 28 million tCO_2e. The 2019 emissions represent 0.009% of global and 5.5% of South African CO_2e emissions, respectively. The three largest sectors contributing to eThekwini Municipality's emissions were transport (41%), industrial (31%) and residential (13%). The metropolitan government contributed 5% to total emissions in eThekwini Municipality.

His worship, Mayor Mxolisi Kaunda continues to lead the DCCS governance framework in Durban, and represents the African continent as the C40 Cities Climate Leadership Group's co-Vice-Chair, shared with Mayor Mohammed Sowah of Accra, Ghana. The City has made great strides in its climate leadership work with the assistance of C40, primarily with implementing the Climate Action Plan, secondly through the development of a new buildings efficiency policy and through the development of the City's Transformative River Management Programme (developed through the Cities Finance Facility). Details of this work can be found in this report. Finally, Durban reported on C40's Carbon Disclosure Project (CDP) platform, scoring a "B". This was down from the previous year where the City had scored an "A". The Climate Secretariat participated in the process to develop C40's new leaderships standards for membership and is busy implementing these.

During the financial year, the 2019/20 DCCS annual report was produced. For the first time, this report was produced by the City's Communication Unit and only in electronic format. While this was in response to the budget restrictions imposed by the economic recovery plan, it is recognised that this represents a financially and environmentally prudent precedent, saving the city both money and carbon emissions. This 2020/21 DCCS annual report will continue in this vain and will provide more details on this summary, as well as highlighting some of the projects being implemented in the City.





2. Climate change global landscape

2.1. Status quo from 2018/19

During 20/21, the IPCC continued to work on its 6th Assessment Report, with Working Group I due for release in August 2021. Professor Debra Roberts continues to Co-Chair Working Group II, balancing the global need for climate science with local leadership responsibilities. Her global reputation continues to grow, and by association, so does the City's reputation. The next annual report will provide a summary of the Working Groups I and II assessment reports.

2.2. Legislative and policy framework background

The eThekwini Municipality's climate change, resilience and sustainable development work is guided by international agreements reached through the United Nations bodies. The Paris Agreement was approved by all parties at the United Nations Framework Convention on Climate Change (UNFCCC) and ratified in 2016. The agreement provides a legally-binding framework to deal with climate change, accelerate actions and secure the investments needed for a sustainable future. South Africa is a signatory to the Paris Agreement and has a set of Nationally Determined Contributions towards addressing climate change globally. The agreement brings all nations, developed and developing, into common but differentiated cause to undertake efforts to combat climate change and adapt to it. During 2021, Earth's nations will meet in Glasgow for COP26. At this meeting they will hope to significantly raise ambition of their commitments to the Paris Agreement. Currently, the commitments are consistent with a world with temperatures 2.5°C higher than pre-industrialised levels.

During the 2021/22 financial year, the South Africa government is likely to promulgate the Climate Change Act. This will provide a legislated framework for action in all spheres of government and will require that these spheres work more closely together to ensure a coordinated national approach to tackling climate change. The Sustainable Development Agenda is made up of 17 goals which came in to effect in January 2016. It calls for action to promote development while protecting the planet. The agenda highlights the aim of reducing global greenhouse gas emissions and addressing adaptation to climate change impacts through SDG13. It also makes provisions for less resourced countries, noting they will need support to meet their obligations. There are now stand-alone goals on urbanisation and climate change. South Africa has shown commitment to the agenda and has adopted the sustainable development goals.

The Sendai Framework for Disaster Risk Reduction was adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, in March 2015. The framework outlines seven targets and four priorities for action to prevent and reduce disaster risks for the next 15 years. The agreement recognises the primary role of state government institutions in reducing the risk of disasters, but it also notes the need for local government and the private sector to play a part. In November 2016 South Africa and other Southern African Development Community (SADC) countries showed their commitment by developing the SADC Regional Disaster Preparedness and Response Strategy, which is in line with the Sendai Framework.

The Disaster Management Amendment Act 16 of 2015 places an emphasis on resilience and risk reduction through ecosystem and community-based adaptation. Section 53 of the Act provides a strong mandate to South African municipalities to conduct risk and vulnerability assessments, develop adaptation plans and allocate budget for adaptation programmes. The South African national government is busy concluding preparations for the Climate Change Act, a dedicated piece of legislation to guide and compel action. A new carbon tax is expected to be included in the Act. The new act will include implementation of South Africa's Nationally Determined Contributions (NDCs), Low Emission Development Strategies (LEDS) and the adoption of the National Waste Management Strategy (NWMS) 2020. A future Presidential Climate Change Coordination Commission (PCCCC) will also be set up with a budget of R50 million to advise and guide South Africa's response to climate change. The LEDS will be placed within the UNFCCC to portray SA's commitment to low emissions development that will encourage developed countries to invest in technology and capacity building. The new NWMS will aim to reduce the amount of waste going to

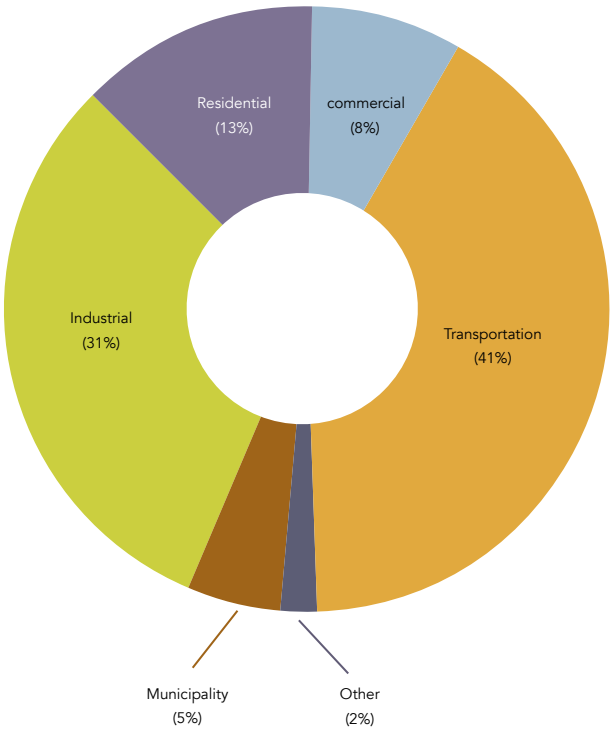
landfill sites by 40% through various incentives such as reuse, recycling and alternative waste treatments. The role of waste pickers and the informal market in the circular economy will also be enhanced and supported.

2.3. Covid-19

Covid-19 continued to be a major disrupting influence during the financial year, both in terms of budget to implement the DCCS and secure staff vacancies, but also in terms of continued restrictions to in-person meetings. This did present challenges for working with line functions to develop their project descriptions, but the service providers leading this work were skilful in their use of online tools enabling the work to get done. The only shortfall was with the clinical health section of the Health Theme, whereby it was not possible to do the work with the department given their prioritisation of Covid-19 actions. This will be completed once the pandemic has subsided, hopefully in the 21/22 financial year.

3. EThekwini Municipality
Greenhouse Gas Inventory

The City's Energy Office compiles an annual greenhouse gas (GHG) emissions inventory according to accepted global protocols. The total greenhouse emissions recorded for the entire eThekwini Municipal Area was 29,175,112 tCO_2e[1] for the 2019 year. As with previous GHGEIs, the largest contribution to this carbon footprint was the transportation sector (41% of the total GHGs) followed closely by Industry emissions (31%).

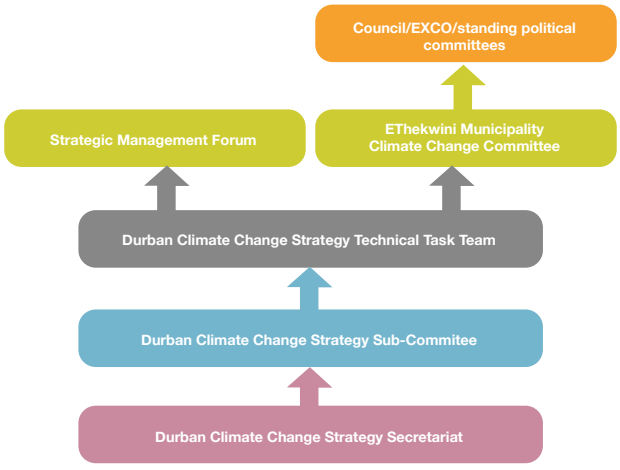


[1] *Includes scope 1, 2 and selected scope 3 emissions*

4. DCCS Implementation Framework and progress during 2020/21

4.1. Brief overview of the DCCS Implementation Framework

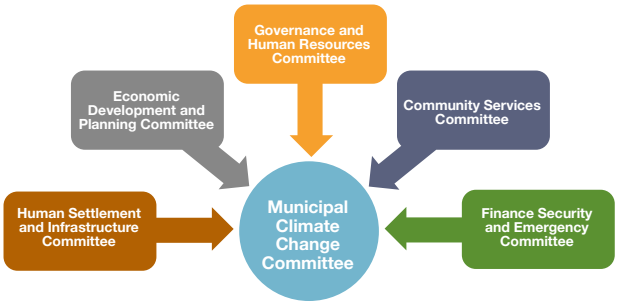
The aim of the DCCS is the successful implementation of an integrated mitigation and adaptation climate change response. A DCCS implementation framework was developed in 2016 with three themes: governance, implementation, and strategic development. The three themes are based upon guidance contained within the *Durban Adaptation Charter Implementation Guidance Workshop Report*, held in March 2013. Implementation of the DCCS is, therefore, aligned with the Ten Principles of the Durban Adaptation Charter (DAC). The DCCS governance structure encompasses both the political and administrative functions of the municipality. Political oversight of the DCCS is entrusted to the eThekwini Municipality Climate Change Committee (EMCCC). This body sits quarterly and is chaired by His Worship, Mayor Kaunda. The EMCCC is composed of ten councillor representatives from the five municipal portfolio committees, a Deputy Chair, and the Chairperson. The diagram below shows the reporting lines within the DCCS governance framework, with the DCCS Technical Task Team reporting to the EMCCC.



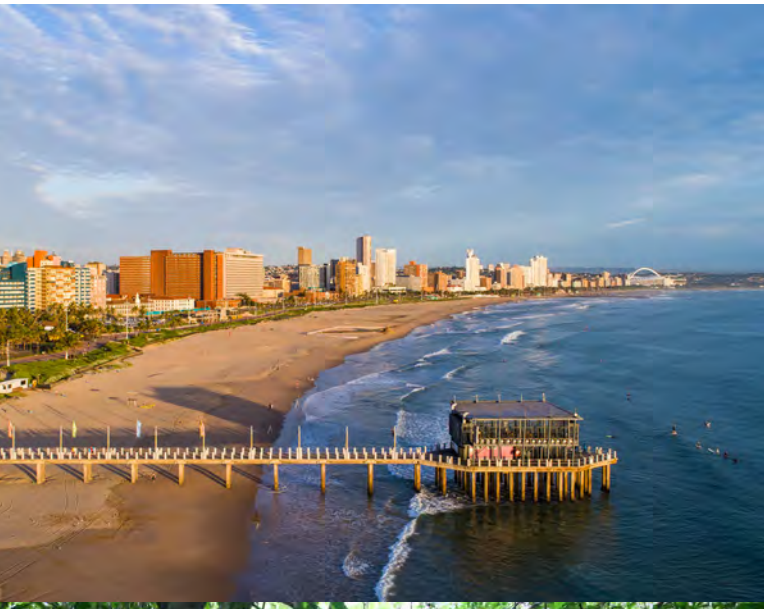
Climate Change Governance Framework of the DCCS

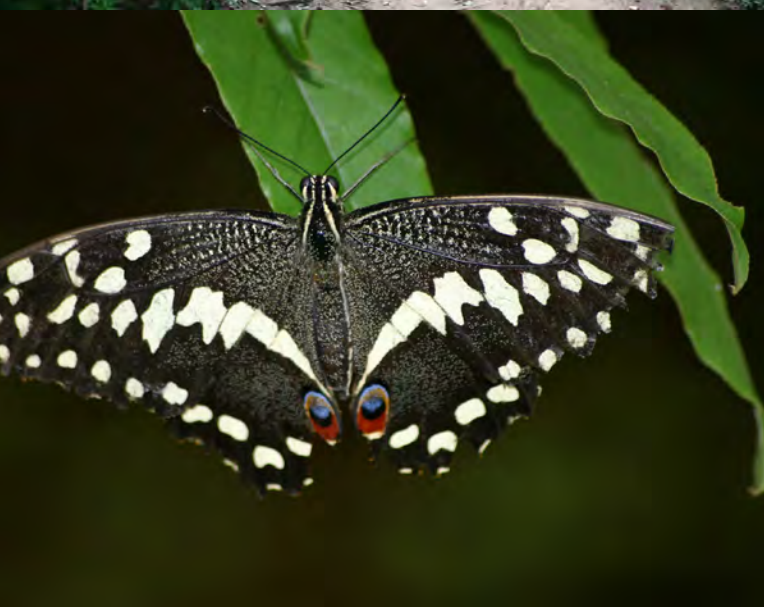
Implementation of the DCCS is driven by the Technical Task Team (TTT), consisting of senior administrative leadership of municipal units responsible for implementing themes of the DCCS. The TTT fosters collaboration between functions, with each Head driving climate change implementation within that Unit. Supporting the TTT is the Subcommittee, consisting of Deputy Heads and Senior Managers of departments responsible for implementing projects identified within the DCCS.

Supporting and coordinating the implementation of the DCCS Governance Framework is the Secretariat consisting of the Climate Protection Branch (focus on adaptation) and Energy Office (focus on mitigation). The two functions now form the new Climate Change Department within the Development Planning, Environment and Management Unit. The Secretariat is supported by Urban Earth, an appointed service provider to the municipality for a period of 36 months.



EMCCC representation is from the five Municipal Portfolio Committees.





4.2. Governance updates during 2020/21

Implementation of the DCCS Governance Framework for the 2020/21 financial year has been somewhat erratic, with Covid-19 proving to be a major obstacle to convening meetings, not just physically, but also because it has required so much of the time and focus of City leadership. The Climate Change Secretariat has used this opportunity to pause meetings of the Technical Task Team to undertake a review of the DCCS Governance Framework, to ensure that it is consistent with the outcomes of the first five-year review of the DCCS and the development of an integrated implementation plan and communication framework. During this period, the TTT Sub-Committee has continued to meet every two months to guide the development of the implementation plan, which was achieved by the end of the financial year

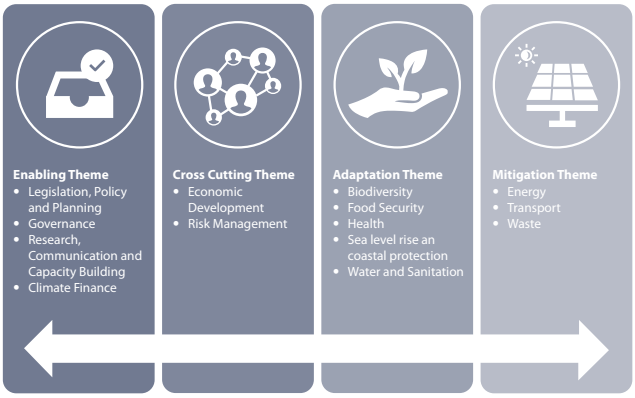
During the 2020/21 financial year the eThekwini Municipality Climate Change Committee (EMCCC) met twice, completing 50% of planned meetings for the year. The focus of the Chair has been on driving implementation as well as accountability for climate actions within the city in line with the city's climate commitments. The Launch of the Durban Climate Action Plan, led by his Worship Mayor Kaunda, assisted to lay the foundation for this objective as well as pushed for the need for a green and inclusive economic recovery from the impacts of Covid-19.

4.3. Implementation theme

During the financial year, implementation of DCCS projects continued and some of these are described in this report. The DCCS Secretariat will begin reporting on implementation of the monitoring and evaluation framework in this section of the report once the framework is approved by Council during the 2021/22 financial year. Once Council has approved the reviewed DCCS and implementation plan, it will be communicated through the new climate change portal being developed as a part of the process.

4.4. Strategic development, Monitoring and Evaluation and Research theme

There have been several stakeholder events and key stakeholder interviews with the intention of reviewing the content and structure of the DCCS and CAP. One of the key revisions from the 2015 DCCS is the inclusion of enabling themes as part of the strategy structure. Previously, the DCCS was structured according to sectors clustered into climate change mitigation, adaptation and "cross-cutting" themes. However, over the past five years, it has become apparent that there are higher-level, enabling interventions that need to be put in place for implementation at a sector level to be effective. As a result, new enabling themes, which include Legislation, Policy and Planning; Governance; Research, Communication and Capacity Building and Finance have been included in the revised Strategy. The themes in the revised DCCS are summarised in the diagram below.



A brief summary of CAP targets

There are now four pillars in the revised Strategy, with themes split into sectors. These sectors are where the DCCS will be implemented. For example, the Adaptation Theme includes the sectors of Biodiversity, Food Security, Health, Sea Level Rise and Coastal Protection, and Water and Sanitation. Each sector has programmes and projects with targets that will be measured to guide progress within a dashboard, that will be used within meetings of the governance framework.

The revised strategy also has several updated targets that align with the Climate Action Plan and international and national commitments. There are short-term (by 2025), medium-term (by 2030) and long-term (beyond 2050) targets in place.

The following draft short-term targets (by 2025) have been identified for each theme and sector (it should be noted that the process to populate projects with base-line information will shift the targets as given in this table, so the final targets will likely look somewhat different to those presented here).

Theme Title	Programme	Short Term Targets (by 2025)
Legislation, Policy and Planning	Mainstream climate change into all municipal legislation, policy and planning processes	20% of all Municipal policies, sectoral and strategic plans updated to be climate change responsive
Governance	Develop appropriate institutional structures in Durban to adequately respond to climate change	1 X multi-stakeholder institutional structures set up in Durban to actively responding the climate change
Governance	Monitor, Evaluate and Revise Municipal Climate Change Response in Durban	1 X monitoring and evaluation systems set up that can track the effectiveness of climate change actions being taken by the Municipality.
Research, Communication and Capacity Building	Build capacity in all stakeholder groups in Durban to adequately respond to climate change	20% of schools, wards, businesses, and civil society groups at which a climate change awareness campaign has been rolled out
Research, Communication and Capacity Building	Coordinate and conduct high-quality, innovative, local climate change research on an on-going basis	1 X mechanism setup to coordinate local climate change research on an on-going basis.
Climate Finance	Develop financing capacity to access climate funding opportunities	1 X climate financing posts established in the eThekwini Municipality
Climate Finance	Revise municipal financing systems to compensate for climate change impacts on revenue and costs	1 X funding models implemented for eThekwini Municipality that take into account the impacts of climate change
Economic Development	Develop a climate resilient, low-carbon economy in Durban that is socially responsible and environmentally sustainable	5% of the eThekwini Municipality's Economic activity that is low carbon, socially responsible and environmentally sustainable
Economic Development	Implement programmes in the short term that can contribute to climate change responsive economic development in Durban	2 X short term economic development projects that can contribute towards a climate sensitive transition in Durban
Risk Management	Facilitate the transition of communities (particularly poor and previously disadvantaged) in Durban towards climate resilience	10% of vulnerable wards in Durban in which a project has been implemented to build climate resilience
Risk Management	Integrate and align disaster management processes in Durban with climate change resilience in Durban	20% of line departments with disaster management plans that have been updated to include climate change risks and related accountability
Water and Sanitation	Adopt and enforce planning regulations that responds to potentially amplified flood risks due to climate change	20% of existing, relevant Municipal strategies, legislation, spatial frameworks, spatial plans, and standards in which flood-lines have been updated to adequately reflect projected climate change risks

Risk Management	Protect or relocate existing Municipal infrastructure currently located in high climate-risk areas	10% of Municipal Infrastructure in high climate risk area that is protected or relocated
Biodiversity	Integrate climate change into existing biodiversity management practices	25% of biodiversity management practices that have climate change risks and opportunities incorporated
Food Security	Increase locally produced food	10% increase in locally produced food consumed locally based on 2020 baseline
Food Security	Reduce the volume of food waste in Durban	10% reduction in food waste in Durban
Food Security	Support food distribution and marketing networks in Durban in adapting to climate change	10% Increase the access of informal small-scale agricultural growers to formal markets
Health	Maintain urban heat levels in Durban at 2005-2015 average temperatures	1 X degree centigrade overall heat levels are higher than 2005-2015 average temperatures in Durban
Health	Achieve World Health Organization (WHO) air quality standards across Durban by 2040	20% of days per year in which the World Health Organization's air quality standards are achieved across Durban
Health	Reduce water- and vector-borne diseases linked to predicted climate change impacts to zero	20% reduction in the number of cases of water- and vector-borne diseases linked to predicted climate change impacts in Durban
Sea Level Rise and Coastal Protection	Identify, inform, and regulate all developments in Durban that are located within the hazard zone and Coastal Management Lines	20% of coastal developments located in Durban complying with KwaZulu-Natal's Coastal Management Lines
Sea Level Rise and Coastal Protection	Set up systems to protect or relocate existing Municipal infrastructure currently located in high-risk coastal areas	20% of existing Municipal infrastructure located in high-risk coastal zones in Durban that has been relocated or protected
Water and Sanitation	Establish the Transformative River Management Programme (TRMP) in Durban	500 km transformed municipal-owned riverine corridor land to be climate-resilient, clean, safe and healthy
Water and Sanitation	Improve the quality of effluent being discharged into water bodies in Durban	20% of annual water quality tests achieving minimum water quality requirements as defined by the department of Water and Sanitation
Water and Sanitation	Increase alternative water-supply capacity to meet 100% of the projected increases in demand for water, in Durban, that result from climate change impacts	20% increase in alternative water-supply capacity to meet the projected increases in demand for water that result from climate change impacts in Durban
Water and Sanitation	Reduce water demand throughout Durban	5% reduction in water demand throughout Durban from a 2005-2015 average baseline
Energy	Ensure 100% of electricity purchased by the eThekwini Municipality is produced from renewable energy sources by 2050	10% of electricity purchased by the eThekwini Municipality that is produced from renewable energy sources

Energy	Ensure 70% of private electricity demand in Durban is supplied by renewable energy generated locally (in Durban and KwaZulu-Natal) by 2050	10% of private electricity demand in Durban that is supplied through self-generated renewable energy options
Energy	Reduce electricity consumption by 40% by 2050 across residential, commercial, municipal, and industrial consumers in Durban by 2050	10% reduction in electricity consumption across residential, commercial, municipal, and industrial consumers in Durban compared to an agreed-upon baseline
Energy	Transform eThekwini Municipality's infrastructure to a net-zero carbon footprint	10% of all Municipal infrastructure in Durban that is transformed to a net-zero carbon footprint
Waste and Pollution	Divert 50% of waste disposed to landfill sites by 2023 and 90% by 2050, in Durban	10% of waste disposal diverted from landfill sites
Waste and Pollution	Reduce 50% of Greenhouse Gas (GHG) emissions resulting from waste in Durban by 2030 and 90% by 2050.	20% of Greenhouse Gas emissions from waste reduced compared to a 2020 baseline
Transport	Promote Transit Oriented Development (TOD) in line with the Built Environment Performance Plan targets	1 X projects implemented to promote Transit-Oriented Development in Durban
Transport	Facilitate a switch of all vehicles registered within Durban to low-carbon options	5% of low-carbon vehicles registered within Durban
Transport	Implement travel-demand measures that will reduce existing private car trips by 50%	15% reduction in existing private car trips
Transport	Provide and maintain high-quality active mobility and non-motorised transport (NMT) systems that will increase their use by 30%	10% Increase use of NMT systems
Transport	Facilitate a shift of 30% of road freight to rail freight	5% of road freight shifted to rail freight compared to an agreed-upon baseline

A final draft detailed implementation plan is currently in place, but it is subject to approval from Council, so cannot yet be shared. There 14 sectors in the strategy each with a number of programmes and associated projects. There are currently a total of 134 different projects (see table below) in the detailed implementation plan and each project has assigned owners and timeframes and estimated budgets. Once the process to finalise base-line information associated with the projects is completed, the dashboard for oversight by the TTT and CCC will be presented for review, and at that point the revised DCCS and Implementation Plan (including the monitoring and evaluation framework) will be submitted for Council approval.

Counts of projects within each sector of the four thematic areas of the DCCS Implementation Plan.

Thematic Area Title	Sector Title	Count
1 Enabling		
	01) Legislation, Policy and Planning	2
	02) Governance	3
	03) Research, Communication and Capacity Building	5
	04) Climate Finance	3
2 Cross Cutting		
	05) Economic Development	10
	06) Risk Management	13
3 Adaptation		
	07) Biodiversity	5
	08) Food Security	8
	09) Health	13
	10) Sea Level Rise and Coastal Protection	8
	11) Water and Sanitation	21
4 Mitigation		
	12) Energy	19
	13) Waste and Pollution	8
	14) Transport	16
Grand Total		134

4.5. DCCS Research

Durban Research Action Partnership

The Durban Research Action Partnership (DRAP) was established in 2011 to improve our understanding of the impacts of climate change and the role of ecological infrastructure in delivering ecosystem services. The partnership is primarily between eThekwini Municipality (EM) and the University of KwaZulu-Natal (UKZN), but it does involve researchers of other tertiary academic institutions in Durban. Understanding the impacts of climate change and the role of ecological infrastructure in delivering ecosystem services requires transdisciplinary research where different academic disciplines work together with municipal officials in providing scientific evidence or knowledge for decision- or policy-making. Research undertaken under DRAP assists eThekwini Municipality in implementing the Durban Climate Change Strategy (DCCS) and addressing gaps which have been identified by Durban's Climate Action Plan (CAP), and decision making in responding to environmental pressures such as illegal sand mining which is increasing at an alarming rate not only in eThekwini Municipality but across the province.

EThekwini Municipality has been working together with UKZN in co-designing research projects which feed into the work of the city and assist in policy development. The 2019/2020 financial year saw the involvement of the Research and Policy Advocacy (RAPA) Unit within DRAP. The DRAP Steering Committee highlighted the importance of translation of research outputs into policy, and it approved the appointment of Research Assistants to help Principal Investigators (academic researchers) in summarising their research outputs and these summaries can be used for policy development within the city. Engaging with the RAPA Unit has been affected by Covid-19 regulations (working from home has been a challenge)[2]. These engagements are important for the translation of research outputs into policy and they have assisted in bringing different departments into DRAP workshops. This has also translated into a closer relationship between the City and academic disciplines when setting up the City's Educational Partnership for Innovation in Communities (EPIC) programme.

[2] *and also due to the sad passing of Prof Chris Buckley who was leading this process at the time of writing this report.*

The Global Environment Change Research Programme

The City-funded Global Environmental Change (GEC) research programme is currently on its third phase and will run from January 2019 until December 2021. Each phase has theme-focused research and the theme for this phase is "Rivers: from source to sea". This research programme assists with the implementation of DCCS themes and addressing gaps which have been identified in the Durban Climate Action Plan (CAP). The current phase of GEC has attracted two post graduate students, one PhD student and five MSc students. It has managed to save funds to appoint nine students as Research Assistants. Unfortunately, the current third three-year phase of GEC is ending this year in December 2021, but the municipality has set aside funds for an independent review of all the outputs from DRAP.

Another significant contribution of the research programme is capacity building for post graduate students, with most of the budget funds being spent on student bursaries. The programme targets students from historically disadvantaged backgrounds, which is in line with the objectives of the municipality and national policy. Annually, students are given a platform to share their research work during the annual DRAP student symposium which attracts academic researchers and municipal officials to see students showcasing their research work, and the Municipal Institute of Learning (MILE) is involved in planning for this event. Although core funding is coming from the municipality, UKZN provides co-funding through three South Africa Research Chair Initiative chairs. DRAP uses its existence to strengthen research proposals for external funded research programmes. For example, the implementation of EPIC Durban is being funded by UKZN through its National Research Foundation: Community of Practise (NRF: CoP) research programme.

5. Engagement with C40-Cities Climate Leadership Group

5.1. Governance

His Worship Mayor Kaunda continued in his role of C40 Vice-Chair representing Africa during the 2020/21 financial year. This was an important year with the development of C40's new strategic five-year plan which sets out the activities and achievements cities have to secure in order to remain C40 cities. Durban supported the development of this strategic plan and is well placed to report achievement e.g. annual GHG emissions inventory.

5.2. Special Initiatives

5.2.1. Cities Finance Facility

In August 2018, eThekwini Municipality, through the C40 Cities Finance Facility, launched a project to build a business case around the city-wide implementation of the Sihlanzimvelo Community Stream Cleaning project, which has been successfully running for ten years. In this project, community cooperatives clean stretches of streams, removing solid waste and alien invasive plants, whilst ensuring the riverine corridors are well managed. The intention of the CFF project was to provide an economic incentive for investment in the Sihlanzimvelo project.

eThekwini Municipality's vision is to establish a Transformative Riverine Management Programme (TRMP), which works in partnership with all affected stakeholders to collectively rehabilitate and sustainably manage all riverine areas within its boundaries. The Business Case, completed in December 2020, presents an evidence-based rationale for investment in transformative riverine management across the approximately 7,000km of watercourses in the eThekwini Municipal Area (EMA).

Climate change impacts on riverine areas could cost the municipality and residents of the EMA more than R375 million per annum by 2040. With climate change, riverine ecosystem service levels are predicted to decline on average 11% below current levels by 2040 (Figure 1).

Rivers influence and are influenced by the people, land uses and economic activities that surround them. Transforming the human and economic relationship with riverine areas is central to ecosystem-based adaptation to climate change, building resilience and reducing vulnerability. A "transformative" approach to riverine management that limits land use impacts on rivers, restores and manages riverine areas, would reduce the city's exposure to climate change risks and reduce current shortfalls in societal, financial and economic benefits from rivers.

The Sihlanzimvelo Programme demonstrates that managing rivers contributes meaningfully to sustainable municipal

service delivery, reduced vulnerability to climate change, enhanced human well-being, and job creation. By expanding the Sihlanzimvelo community co-operative model, 1,557 permanent jobs could be created through 234 co-operatives. A city-wide TRMP would not only limit climate change impacts on riverine services but could lift ecosystem services levels by 10% above the status quo.

Public and private investment of R7.5 billion in transformative riverine management over 20 years could unlock municipal and societal benefits ranging between R13 billion and R26 billion. By spending R719 million on transformative riverine governance over 20 years, eThekwini Municipality could enable R4.5 billion in co-investment by private landowners, other government and third parties. The potential exists to create 9,181 jobs through over 1,000 community co-operatives in a city-wide TRMP.

The municipality and broader society could avoid over R176 million per annum in losses if the municipality can enable private landowner investment in riverine management. For each Rand spent by the municipality on enabling private landowner management of rivers, eThekwini Municipality would benefit between R3.30 (basic management) and R5.20 (transformative management) in avoided culvert damage costs, and coastal users would benefit by between R3.20 and R6.50. Private landowner investment in transformative riverine management could create 3,189 job opportunities. Management of upper catchment areas on Traditional Authority land is a critical strategy to minimise ecosystem service losses with climate change. For each Rand spent on enabling riverine management on Traditional Authority land, eThekwini Municipality could unlock between R1.70 and R3.40 in avoided culvert damage costs, while protecting coastal quality[1].

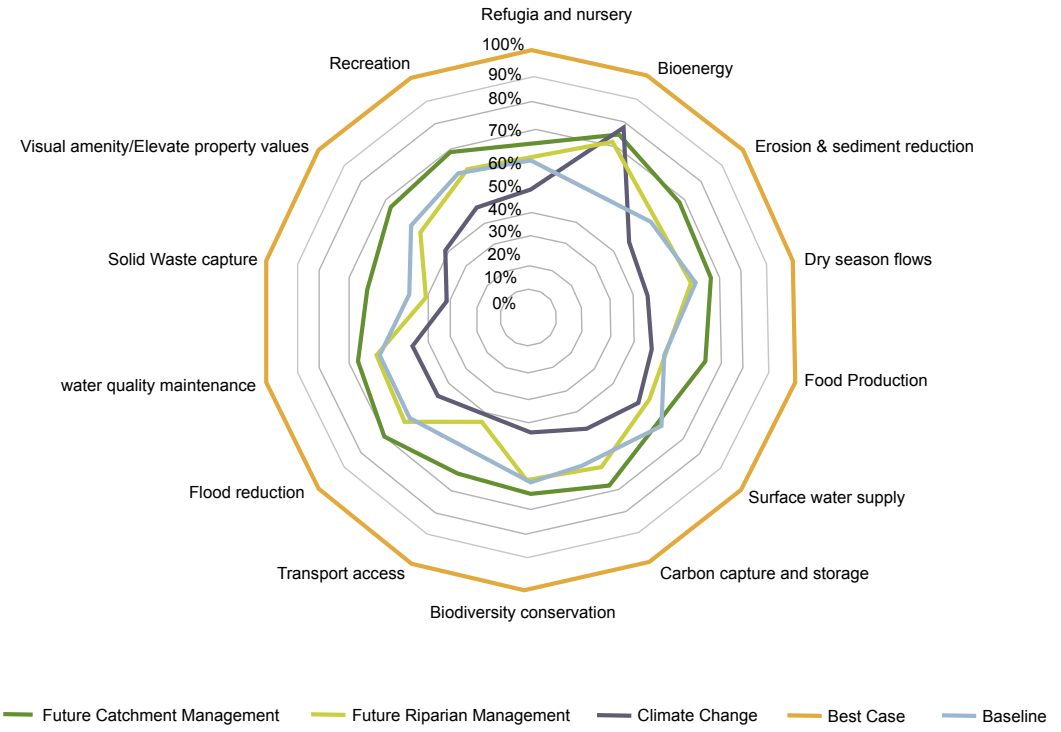


Figure 1: Modelled supply of riverine ecosystem services in the Ohlanga River Catchment under future climate change, riparian and catchment management scenarios[2].

[1] *Extracted from the executive summary of the TRMP business case report.*

[2] *Mander, M., Mander, N., de Winnaar, G. and Graham, M. (2020). Ohlanga Proto-Masterplan for Transformative Riverine Management. Report produced for C40 Cities Finance Facility and GIZ.*

5.2.2. New Buildings Programme

C40 Cities Climate Leadership Group (C40) initiated the South African New Buildings Programme in 2018. The main objective of the Programme was to ensure that by 2030 all new buildings are built according to net zero carbon principles. For the purposes of the Programme, Net zero carbon refers only to carbon emitted from the building's operation, and at this point does not include embodied carbon. However, eThekwini Municipality expanded the scope of the Programme to develop an 'ecosystem' and also focus on resilience aspects. Four Municipalities were selected for participation in the Programme: Tshwane, City of Cape Town, City of Johannesburg and eThekwini Municipality.

The 2020/2021 financial year saw the culmination of the Programme, which officially ended on the 30th of June 2021. The following main aspects were undertaken in the final year of the Programme:

- The eThekwini Municipal Council granted authorisation, in September 2020 to the Energy Office to begin public consultation on the draft eThekwini New Buildings Green Policy.
- The actual consultation and commenting period for the draft Policy was open from the 24th of October 2020 and closed on the 15th of January 2021. Under normal circumstances, the consultation period is required to be open for 30 days. However, due to Covid-19 that period extended to ensure all stakeholders had ample time to peruse the draft Policy and provide their comments.
- Over 27 pages of comments were received, processed and the draft policy was edited accordingly. It is important to note that most, if not all, comments were positive – indicating good buy-in and support for the objectives of the policy and indicated. Energy Use Intensity targets
- The final eThekwini New Buildings Green Policy was adopted on the 29th of April 2021. The policy is currently being operationalised.
- In addition, the eThekwini Municipality has been developing the eThekwini Green Building Incentive Policy. The intention of this Policy is to provide a monthly rebate/ reduction on property taxes for new buildings that are certified green buildings.
- Further information on the Policies can be found here: *http://www.durban.gov.za/City_Services/energyoffice/NBP/Pages/default.aspx*

6. Durban Adaptation Charter

The Durban Adaptation Charter (DAC) was the historic outcome of the Durban Local Government Convention held in Durban, South Africa, in 2011, during the 17th Conference of the Parties of the UN Framework Convention on Climate Change (COP17).

The DAC commits signatories to ten principles of best adaptation practice, all of which align with the articles in the Paris Agreement. Following the initiation of the DAC in 2011, a Secretariat managed a database of local government signatories from 45 countries around the world, mostly from local governments of developing countries. By December 2015, the DAC signatories' database had 1069 signatories. Local government organisations accounted for 728 of the signatories. The balance were individual signatories, either mayors or their assigned representatives.

The realisation of the Paris Agreement brought a change in focus from advocacy to implementation for the DAC Secretariat, which thereafter no longer sought to attract new signatories, but rather focussed efforts on implementation through the DAC Hub and Compact Approach. Since that seminal *DAC workshop in 2013*, the DAC Secretariat has been reporting progress with implementing the DAC in a series of annual reports. The *2020 DAC Annual Report* outlines the progress made in respect of DAC implementation during 2020.

During 2020, Covid-19 brought about many changes in how city officials work with their communities and each other. The city of Durban has learned to adapt through remote meetings and by following strict Covid-19 protocols and has managed to continue the good work of the DAC by creating new partnerships and by conducting project work through this new online normal.

One DAC project impacted by Covid-19 is Miji Bora, where Durban and Mombasa have been engaging in a Peer-to-Peer learning exchange programme to learn from each other and advance their climate change adaptation work. A Durban delegation visited Mombasa in November 2019, but the return learning exchange to Durban, which was cancelled in March 2020 due to Covid-19, was replaced with three online workshops that resulted in sustainability solutions being shared with the Kenyan County of Mombasa. Topics covered included Transformative River Management, the green and circular economies, sustainable waste and wastewater solutions and Educational Partnerships for Innovation in Communities (EPIC).

During the financial year, our surrounding municipalities continued to learn from each other and build capacity for implementation through the Central KwaZulu Climate Change Compact (CKZNCCC) that met virtually. A key work focus for the CKZNCCC was the development of TRMP concept notes by Compact members, supported by C40 and eThekwini Municipality. A joint Compact meeting with officials from Mpumalanga also led to the Mpumalanga Provincial government forming their own climate Compact, which we hope to work closely with in the future.

Research partnerships within the Compact continued to grow through Compact members attending the Durban-hosted EPIC training workshop in February. EPIC is a transdisciplinary research model where university students work on real life community challenges with their research outputs being translated into implementation actions by city partners. During 2020, EPIC Durban completed a pilot study to improve and guide disaster response within informal settlements. EPIC also builds capacity in students, helping them become the young professionals of tomorrow who will support our continental climate change efforts. Durban has also been active in the Urban Climate Change Research Network (UCCRN) through planning for and mentoring of chapter teams in the Third Assessment Report of Climate Change in Cities (ARC3-3) and co-leading a special edition on coastal adaptation of small cities and towns within the journal *Ocean and Coastal Management*.

During the 2020/21 financial year, eThekwini Municipality officials worked closely with the C40 Cities Finance Facility (CFF) to develop Durban's Transformative River Management Programme (TRMP), which aims to improve management of, and climate change adaptation in 7,400 km of the city's streams and rivers, helping to reduce the climate change impacts in the city in relation to flooding, drought and higher temperatures. During the development of the business case to guide investment in these rivers and streams, the TRMP project team worked closely with Compact members to develop their own concept notes for their own TRMPs. During the 2021/22 financial year, we look forward to engaging with the Provincial Department of Economic Development, Tourism and Environmental Affairs to discuss the rollout of the TRMP concept within Compact member projects. Through the Miji Bora project, Mombasa has initiated its own TRMP programme, and Harare is busy planning its TRMP programme through engagement with EPIC Africa.

7. Climate Change Reporting

7.1. CDP

Every year the City reports its climate change progress on the Carbon Disclosure Platform, and this activity is a key requirement to remaining as a C40 mega city. In the 2019/20 financial year, the City scored an "A", highlighting the excellent work that is done. During this financial year, Durban scored a "B", which is still a good score, but it is one that will provide extra motivation to work harder to get back to "A" in the 2021/22 financial year.

Below is the score descriptor received from CDP.

Score	Scoring band	Score description
B	Management	Your city has understood the main risks and impacts of climate change and is taking action to adapt to and reduce these effects. In addition, your city has worked collaboratively with key stakeholders to understand their risks and impacts and now have plans in place to mitigate and adapt.

7.2. IDP and SDBIP

Implementing the Durban Climate Change Strategy and the Durban Adaptation Charter are projects within the City's Service Delivery and Budget Implementation Plan (SDBIP) and are captured in Plan One of the City's Integrated Development Plan (IDP). During the 2020/21 financial year, the Climate Secretariat successfully completed implementation of its project plans supporting its SDBIP commitments, and completed all project spend timeously and according to budget.

8. Communicating the DCCS during 2020/21

8.1. Summary of Communications during 2020/21

The Climate Secretariat has, for the past financial year, been working on developing a communications framework with its service providers. This framework is described in more detail in the next section. The Secretariat has completed its reporting requirements, as per its SDBIP commitments, with the 2019/20 annual report available for download *here*.

The Climate Secretariat also worked with its service providers to produce a Climate Emergency Training course, as well as a course around developing funding applications for climate projects. Both of these courses have been accredited for continuous professional development (CPD) points in the South African Council for Natural and Applied Science Professionals (SACNASP) and through the Engineering Council of South Africa (ECSA). Courses are run periodically for municipal officials, with the latter course instrumental in identifying areas of support for line functions implementing the DCCS (in terms of helping city officials develop project proposals).

8.2. Developing a DCCS Communications Framework

Education and awareness were an integral part of including and motivating residents of Durban in the call to reduce greenhouse gas emissions and take ownership of their carbon footprint. Many of the City's events and achievements in climate action was published in the Durban Metro ezaseGagasini newspaper, mainstream media and various social sites.

A milestone event was the launch of the Climate Action Plan (CAP) which builds on the Durban Climate Change Strategy (DCCS). Durban was the first African city to develop a climate action plan and shared the experiences by compiling a Learning Journey which is aimed at assisting other cities in developing a plan.

Another first for Durban was the finalisation of the New Buildings Green Policy which led to the development of a learning journey that documents the City's methodology approach. A changing energy landscape saw the City draft a new Energy Policy which was open for public comment using all communication channels. A DCCS Communication Framework was developed that sets out guidelines for implementation with short, medium- and long-term deliverables. The City capitalised on various environmental events to drive the message of energy saving and climate action in various communication channels, including:

- Arbor Week - 31st August - 4th September 2020
- Earth Hour - 27th March 2021
- Earth Day - 22nd April 2021
- World Environmental Day - 5th May 2021
- Biodiversity Day - 22nd May 2021

Earth Day, City Hall, eThekwini Municipality

Climate Action Plan (CAP) Launch

9. Implementing the DCCS during 2021/22

The core work of the DCCS Secretariat is implementing the reviewed DCCS through the integrated implementation plan. This will be done by populating the baseline information for the 134 projects, including a prioritisation process, and embedding these in the monitoring and evaluation framework. The Secretariat will undergo training on how to coordinate the implementation plan, embed it in the City's Integrated Development Plan and do the necessary monitoring and evaluation of implementation efforts. This will help guide the next review of the DCCS.

During the financial year, the Secretariat will review the DCCS governance framework in an effort to streamline it to be efficient, effective and engaging. The governance framework will need to be consistent with the requirements of the new Climate Change Act, which is expected to be promulgated during 2021/22. The framework will need to service both the City's political oversight needs as well as connect to the KZN Provincial Council on Climate Change and Sustainable Development, as this is a requirement of the Act. Fortunately, Durban is already ahead of the curve in planning for, and meeting its obligations associated with the Act.

During the 2021/22 financial year, the City looks forward to the establishment of the Climate Change Department within the Development, Planning, Management and Environment Unit. Having a fully-fledged department will give the Secretariat the mandate and status consistent with its need to successful coordinate implementation of the DCCS. We look forward to welcoming the first Deputy Head of the Climate Change Department during the year.

Acronyms

°C	Degrees Celsius
ARC3-3	Third Assessment Report of Climate Change in Cities
C40	C40 Cities Climate Leadership Group
CAP	Climate Action Plan
CDP	Carbon Disclosure Project
CFF	Cities Finance Facility
CKZNCCC	Central KwaZulu Climate Change Compact
COP	Conference of the Parties
CoP	Community of Practise
COVID	Coronavirus Disease
CPB	Climate Protection Branch
DAC	Durban Adaptation Charter
DCCS	Durban Climate Change Strategy
DRAP	Durban Research Action Partnership
ECSA	Engineering Council of South Africa
EMA	eThekwini Municipal Area
EMCCC	eThekwini Municipality Climate Change Committee
EMCCC	eThekwini Municipality
EO	Energy Office
EPCPD	Environmental Planning and Climate Protection Department
EPIC	Educational Partnership for Innovation in Communities
GEC	Global Environmental Change
GHG	Green House Gas
GHGEI	Greenhouse Gas Emissions Inventory
GPC GHG	Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
IDP	Integrated Development Plan
IPCC	International Panel on Climate Change
KZN	KwaZulu-Natal
LEDS	Low Emission Development Strategies
M&E	Monitoring and Evaluation
MAPTTT	Municipal Adaptation Plans Technical Task Team
MILE	Municipal Institute of Learning
NDC	Nationally Determined Contributions
NMT	Non-Motorised Transport
NRF	National Research Foundation
NWMS	National Waste Management Strategy
PCCCC	Presidential Climate Change Coordination Commission

R	Rand
RAPA	Research and Policy Advocacy
SA	South Africa
SACNASP	South African Council for Natural and Applied Science Professionals
SADC	Southern African Development Community
SDBIP	Service Delivery and Budget Implementation Plan
SUDS	Sustainable Urban Drainage Systems
TOD	Transit Oriented Development
TRMP	Transformative Riverine Management Programme
TTT	Technical Task Team
UCCRN	Urban Climate Change Research Network
UKZN	University of KwaZulu-Natal
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change

DURBAN
CLIMATE CHANGE
STRATEGY

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