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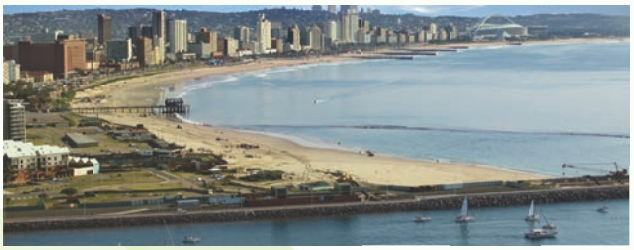
dac | durban adaptation charter



ANNUAL REPORT 2020

MAYOR'S FOREWORD

Covid-19 has 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. Durban has managed to continue the good work of the Durban Adaptation Charter (DAC) by creating new partnerships and by conducting project work through this new online normal.

This DAC annual report will highlight work completed during 2020, sharing the challenges and successes experienced within Hub and Compact implementation. The Miji Bora return learning exchange to Durban 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). Cities continued to learn from each other and build capacity for implementation through the Central KwaZulu-Natal 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 2020, 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. Significant progress was made in 2020 with the development of a business case to guide investment in these rivers and streams, and 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 and Harare is busy planning its TRMP through engagement with EPIC Africa.

As Mayor of eThekwini Municipality, and C40 Vice-Chair representing Africa, it is my pleasure to note the positive progress in the DAC even through these trying times, and in 2021 we hope to further extend opportunities for deepening engagement with our African brothers and sisters through our various city-to-city partnerships. As African cities we stand firm together for the advancement of our continental climate change work.

Honourable Councillor Mxolisi Kaunda, Mayor of eThekwini Municipality and C40 Vice Chair - Africa

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1. INTRODUCTION

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 Convention was organised by the eThekwini (Durban) Municipality in partnership with the South African Local Government Association, SA Cities Network, SA Department of Environmental Affairs, SA Department of Cooperative Governance and Traditional Affairs and ICLEI – Local Governments for Sustainability. The Convention was attended by over 700 high-level delegates from around the world. After intense deliberation, the delegates unanimously adopted the Charter, and it was presented at the high-level plenary session of COP17.

The DAC commits signatories to ten principles of best adaptation practice (see below), 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. This report outlines the progress made in respect of DAC implementation during 2020.

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TEN DAC PRINCIPLES:

1. Mainstreaming adaptation as a key informant of all local government development planning.
2. Understand climate risks through conducting impact and vulnerability assessments.
3. Prepare and implement integrated, inclusive and long-term local adaptation strategies designed to reduce vulnerability.
4. Ensure that adaptation strategies are aligned with mitigation strategies.
5. Promote the use of adaptation that recognises the needs of vulnerable communities and ensures sustainable local economic development.
6. Prioritise the role of functioning ecosystems as core municipal green infrastructure.
7. Seek the creation of direct access to funding opportunities.
8. To develop an acceptable, robust, transparent, measurable, reportable and verifiable (MRV) register.
9. Promote multi-level and integrated governance and advocate for partnerships with sub-national and national governments on local climate action.
10. Promote partnerships at all levels and city-to-city cooperation and knowledge exchange.

2. DAC IMPLEMENTATION DURING 2019

2.1 Overview Of Hub And Compact Approach

The DAC Hub and Compact approach essentially describes a network of networks engaging in collaborative climate change adaptation action. The development of the DAC Hub and Compact approach started with the establishment of a partnership between Durban and Fort Lauderdale/ Broward County in Florida, USA.

These two cities, already advanced in dealing with climate change adaptation, engaged in a series of city-to-city learning exchanges that enhanced peer-to-peer learning outcomes within areas of mutual adaptation interest.

They formed the first two Hubs in the network. A direct outcome of the International Cities/ Counties Management Association-supported exchanges was Durban's adoption of a sub-national climate change compact partnership model (hereafter referred to as the Compact model), pioneered by the Florida Hub, who had previously developed the Southeast Florida Regional Climate Change Compact. The establishment of the partnership between these two Hubs, each with its own Compact, was the genesis of the development of the "Hub and Compact" approach.

It was envisaged that a number of Hubs, each with its own Compact, would develop partnerships to effectively develop a network of networks across Africa to address climate change adaptation. Exchanges between Hubs through city to city partnerships have as their intended outcome the establishment of compacts for hubs participating in exchanges.

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During 2017, a series of exchanges were concluded with Northern Mozambican Hubs, and the Compact of Coastal Cities of Mozambique emerged. By entering into Compact partnerships with a Hub, local and district municipalities agree to work collaboratively in addressing climate change. This provides an opportunity for a coordinated climate change adaptation response that transcends local political boundaries (See Figure 1).

It allows for the sharing of skills and capacity within the Compact partnerships and the development of project proposals, which can be submitted for funding through National Implementing Agents for international funding mechanisms.

Compact implementation is guided by the development of transdisciplinary research partnerships realising the co-generation of knowledge that will help cities make suitable development decisions appropriate for a climate change future. By way of example, the Central KwaZulu-Natal Climate Change Compact (CKZNCCC) is supported by the Durban Research Action Partnership (DRAP). The DAC Secretariat works closely with the DRAP Secretariat to ensure that other African Hub cities develop similar research support.

This is being done through the Urban Climate Change Research Network (UCCRN) and the development of the Educational Partnerships for Innovation in Communities (EPIC) Africa network (see implementation during 2019 below). During 2018 and 2019, exchange visits were conducted with Lusaka, Zambia, who co-led the development of the EPIC Africa network.

A summary of 2020 implementation of the DAC Hub and Compact approach is provided below.

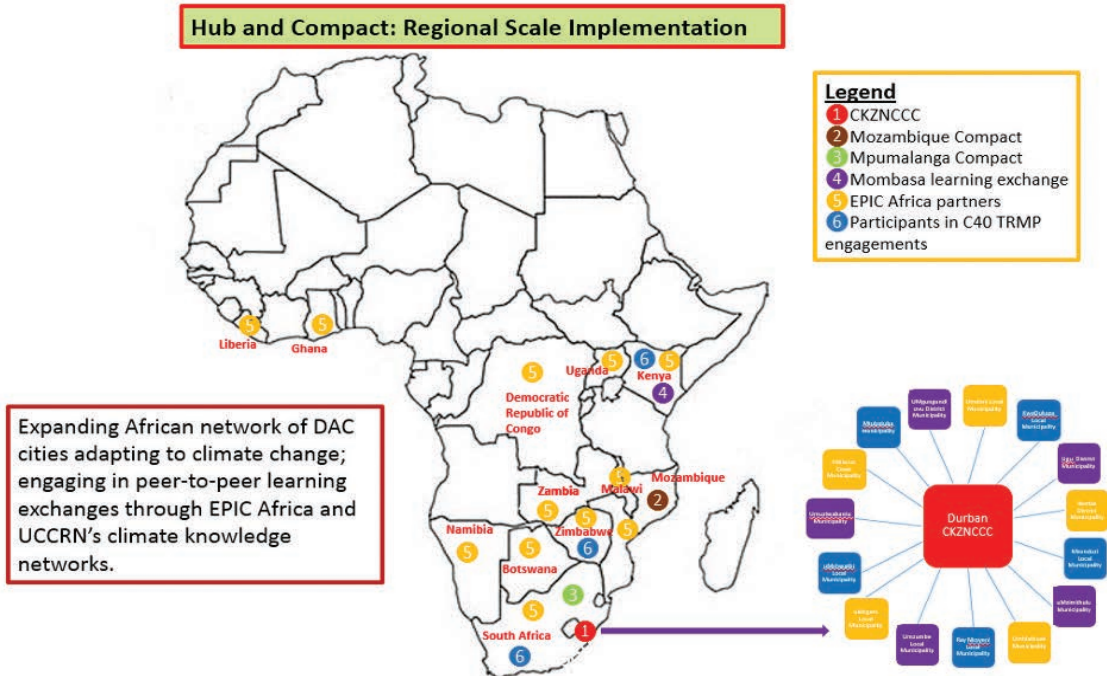

Figure 1: Hub and Compact Map

3. DAC IMPLEMENTATION DURING 2020

3.1 DAC Hub and Compact implementation during 2020

During 2020, Covid-19 has touched virtually every human being (and many other creatures) on this planet. Sadly, for the most part, the impact was negative, and DAC implementation was not immune to the pandemic. While a successful training event was held, in person, for the Educational Partnerships for Innovation in Communities Africa network, this proved to be the last in-person DAC event for the year.

The planned Miji Bora city-to-city learning exchange in Durban, by a delegation from the County Government Mombasa in March, had to be postponed a week before the delegation was due to arrive. Whilst all preparations were complete at the time of postponement, it proved to be the correct decision as South Africa went into a strict lockdown in what would have been the week of the event.

All subsequent activities related to Miji Bora were conducted electronically with a series of three online webinars providing the material for sustainability planning in the two cities.

Covid-19 similarly impacted upon trainees of the EPIC Africa event with very few able to conduct the in-person meetings to set up their own programmes in their home organisations. A notable exception was County Government Mombasa which set up its EPIC programme with its first product being a sanitation system for the City's ferry passengers. Engagement within the monthly EPIC Africa network meetings was consistent and a number of outreach events were conducted included a presentation to the Association of African Universities. During the year, the EPIC-N secretariat provided invaluable support for EPIC Africa, and that included access to the EPIC-N members commons and the setting up of the EPIC Africa website.

The Central KwaZulu-Natal Climate Change Compact also proved to be resilient with meetings of the members transitioning to online without a single in-person meeting able to be convened. The Compact did not manage to meet in the first half of the year, but did meet as per normal schedule thereafter. The big win for the Compact was the establishment of a compact led by the Mpumalanga Provincial government, who participated in the CKZNCCC meetings. During 2020, the CKZNCCC members started a process to develop concept notes for implementation of a Transformative River Management Programme, which are likely to be integrated across the four participating members. Funding is currently being sought for implementation.

Finally, the Urban Climate Change Research Network (UCCRN) was very active during 2020, with planning for the Third Assessment Report of Climate Change in Cities (ARC3-3) well underway, and the process to identify lead and contributing authors completed for the first three chapters. By the end of the year, the collaboration on the special edition of the Ocean and Coastal Management journal on climate change adaptation in small coastal cities and towns was ready for final submission to the journal following peer review. This should be complete early in 2021.

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3.2 Miji Bora Implementation During 2020:

The Miji Bora project is funded by the Western Indian Ocean Marine Sciences Association (WIOMSA) within its Cities and Coasts programme. The aim of the Miji Bora project is to develop and prototype smart and sustainable solutions for a climate resilient County Government of Mombasa (CGM). The peer to peer (P2P) learning component of the Miji Bora project seeks to develop and test a framework for P2P learning between cities, critically assessing the efficacy of the CGM experience. During 2020, a Masters student registered with and submitted a research proposal to the Technical University of Mombasa.

During 2019, the first peer to peer learning exchange between officials of eThekwini Municipality and the County Government of Mombasa took place from 11th – 13th November in Mombasa. These two coastal cities share many similarities and challenges, and both have committed to improving the functioning of their governments and addressing climate change through engaging in a series of learning exchanges.

The November exchange focused on sustainable solutions to climate change-related challenges in the Water, Sanitation, Solid Waste, Environment, Transport and Energy sectors and was convened as one of the key activities of the Miji Bora action research project.

The return exchange was planned for March 2020, and all preparations were complete when, a week before the planned event, Miji Bora project leaders met and agreed to postpone the event due to Covid-19. Fortunately, there was almost no loss of funding for cancellations of bookings made for the exchange. By June, it was apparent that the return exchange would not be held any time during 2020, so an alternative approach was planned, through a series of webinars covering topics that would have been dealt with during the in-person exchange.

The two on-line exchanges focused on Transformative River Management and Sustainable Waste Water Solutions.

A third recorded webinar focusing on the Green Economy Associated with Durban's Solid Waste was made available to officials from County Government Mombasa. In response, the Mombasa officials are planning a series of online workshops to develop the County's sustainability and smart plans, which will be piloted during the year. A more detailed outline of progress made in Miji Bora during 2020 can be found in the WIOMSA Annual Grantees meeting article of the DAC International Events section of this report. Summaries of the two live exchange webinars are below.

3.3 Virtual Peer-to-Peer Learning Exchange on Durban's TRMP

The first virtual workshop of the Miji Bora Peer-to-Peer learning exchange, focused on Durban's Transformative River Management Programme (TRMP), was held on 23rd July 2020. The TRMP brings local government, communities, the private sector and traditional authorities into a partnership to manage our natural waterways to increase resilience to climate change, create employment in communities where this is desperately needed and improve the sustainability of our systems, including economic, social and environmental.

Dr Godffrey Nato, who leads the Environment, Solid Waste and Energy Department, indicated that the P2P learning programme offers the County Government Mombasa and eThekwini Municipality (Durban) the opportunity to share climate change solutions relevant to both cities. He further highlighted that as Mombasa they have a number of departments engaged in this adventure:

- The department of Transport and Infrastructure;
- The Public works department which also carries the key components of the Miji Bora Project on the issue of drainage;
- The Water Sanitation and Natural Resources office;
- The department of Environment;
- The Land Housing and Planning department, and
- The ICT Department.

He indicated that the day's discussion would focus on Durban's Sihlanzimvelo project, and the business case effort that is co-funded by C40. He also emphasized Mombasa is very interested in the Learning Experiences of this project because in the 2020-2021 financial year for the County Government of Mombasa, three departments have allocated resources towards River Catchment Management (Mthobanga River).

These departments are as follows:

- Transport and Infrastructure Department particularly by leadership of the engineering unit that have the key interest in wetland restoration focusing on the river;
- Land Housing and Urban Renewal Department that deals with settlement issues and plans, and their interest is through solid waste and compliance; and
- Water Sanitation and Natural Resource Department that is the key player in restoration because they are in charge of sewerage, and one of the challenges they are facing alongside that river is the sewage leakage into the river stream.

Mr Geoff Tooley, Senior Manager in Durban's Coastal, Stormwater and Catchment Management Department presented the project. He highlighted how cooperatives of communities living along the streams manage the watercourse, doing tasks that are normally done by seven different line functions in the City, e.g. keeping the river flowing etc. He further indicated that as the City, they think this is an efficient and sustainable way of doing river management. The City funds the pilot, which is currently about 300 km, and they are hoping to do it for the whole of the City in future, and that this approach will be adopted in Africa, because it is an approach that can be applied to various situations in African cities.

He indicated that the project is funded by the city. C40 is a partner within C40 City's Finance Facility, funding aspects to guide the development of a business case to establish the costs and benefits and what fixes can be applied to various stretches of streams in the City.

There was a robust question and answer series following the presentation, and a number of valid points were raised.

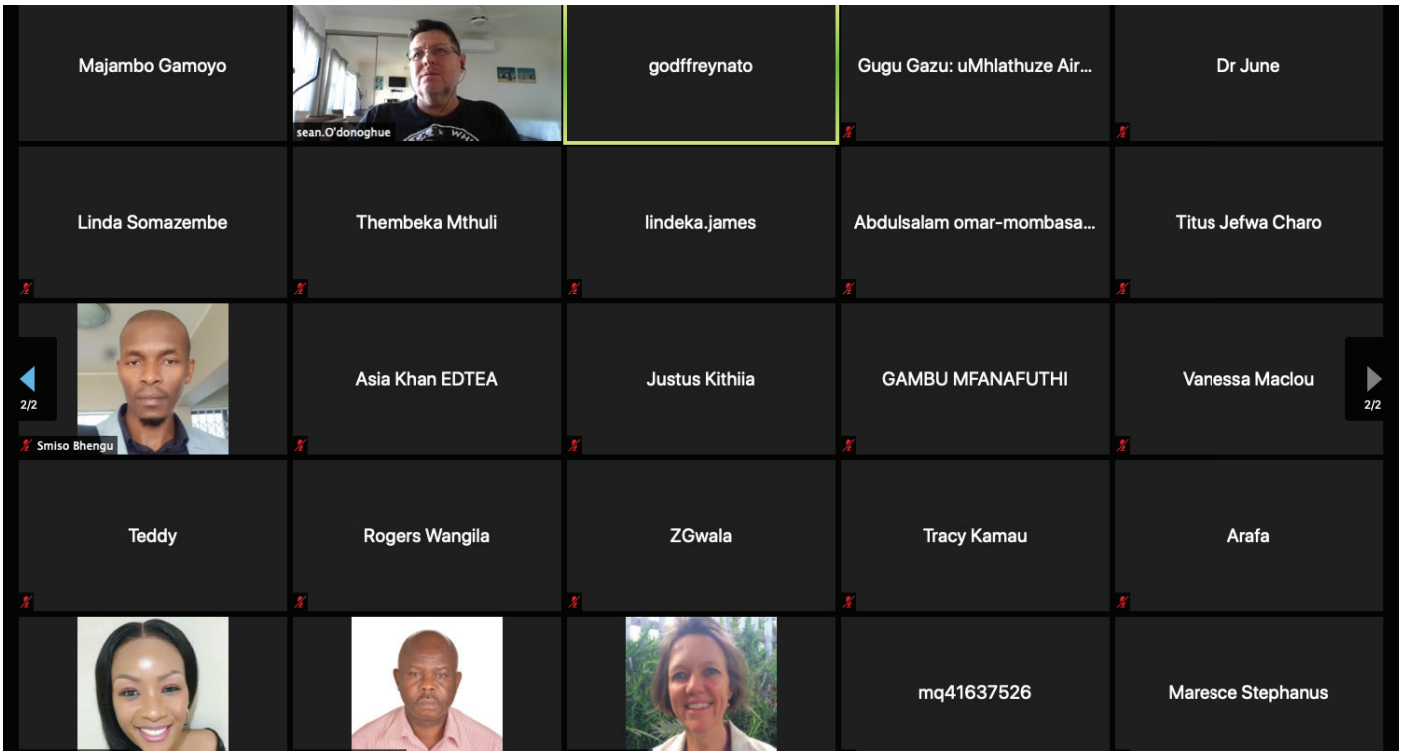
The County Government of Mombasa delegation committed to reflect on this and future workshop presentations in developing a sustainability plan through Miji Bora. By the close of 2020, CGM had established their TRMP programme in the Mthobanga River project.

This represented the second output from the P2P component of the Miji Bora project, the first being the establishment of the EPIC programme (see below) in the County.

The Western Indian Ocean Marine Science Association is thanked for funding the Miji Bora project, and COMRED for their excellent planning of meeting events.

3.4 Miji Bora Project Mini Symposium Sustainable Sanitation Solutions

With the Peer to Peer exchange still on hold due to Covid-19, the Miji Bora project convened a second virtual exchange between County Government Mombasa officials and counterparts from Durban (eThekwini Municipality), South Africa on the 4th September 2020, focused on Durban's sustainable sanitation projects. The webinar had 26 participants from various City departments as well as members of the Central KwaZulu-Natal Climate Change Compact.



In welcoming participants to the event, Dr Godfrey Nato, leader of the Environment, Waste Management and Energy Department emphasized the importance of the webinar to the department of water and sanitation, especially in terms of sharing sustainable solutions for sanitation. After the welcoming remarks, Dr Sean O'Donoghue provided an overview on the peer-to-peer learning exchange and introduced Ms. Lungi Zuma, who is a Professional Chemical Engineer working at eThekwini Municipality's Water and Sanitation Unit (EWS). In the Unit, Lungi is part of a team that works on Research and Innovation projects, primarily focusing on non-sewered sanitation. "If we don't get our sanitation right, it takes away many of the wins we get through our Transformative River Management Programme" explained O'Donoghue, making reference to the previous month's TRMP webinar. Therefore, it is paramount for the two i.e. river management and sanitation to go hand in hand.

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Zuma presented the sustainable sanitation work being done in her department, where the objective is to provide water and sanitation services within areas outside of the formally developed urban zones, including in informal settlements, to ensure an effective barrier against the spread of disease in under-serviced rural communities.

The municipality supplies piped water through Umgeni Water, a private utility company, to urban households while in rural areas and informal settlements, residents receive a free basic amount of 200L of water per day either through a shared stand pipe or delivery by tank. Waterborne sanitation in Durban consists of a conventional centralized sewer system, for which the reticulation systems follows watercourses throughout the system. When parts of the system fail, they discharge into adjacent rivers, thereby putting river management systems at high risk.

Outside of this centralised system, eThekwini Water and Sanitation (EWS) provides Ventilated Improved Pit latrines (VIPs), Urine Diversion Toilets, in rural areas, and Community Ablution Blocks (CABs), in informal settlements.

Zuma presented examples from a range of sustainable sanitation technologies piloted by EWS:

a) Decentralised wastewater treatment system (DEWATS), which is a low-tech system using gravity and biological processes to treat the wastewater at a street scale.
b) ECO-SAN which has a toilet block and a wastewater treatment system that treats wastewater and recycles for toilet flushing.
c) Loowatt which is a household level toilet for informal settlement residents which is a paid service for community members willing to pay for a higher level of service than CABs. User acceptance and affordability is important.
d) Treated wastewater direct reuse for industrial use
e) Treated wastewater and sea water desalination for industrial use.

Key points to innovation sanitation include:

a) Pilot application before going to full scale implementation;
b) User acceptance and political buy-in;
c) Continuous monitoring and improvement; and
d) Increase entrepreneurial involvement.

Screenshot of examples of sanitation solutions presented by Ms Zuma

Rural areas sanitation

- Urine diverting toilet (85 000)
  - Double pit, dry toilet
  - Emptied every 2 years

4. CENTRAL KWAZULU-NATAL CLIMATE CHANGE COMPACT

The Central KwaZulu-Natal Climate Change Compact continued to meet through online meetings and members were encouraged to provide feedback on their climate change activities for this DAC Annual Report. The following highlights were sent to the DAC Secretariat by some of our CKZNCCC members.

4.1 Durban (eThekwini Municipality)

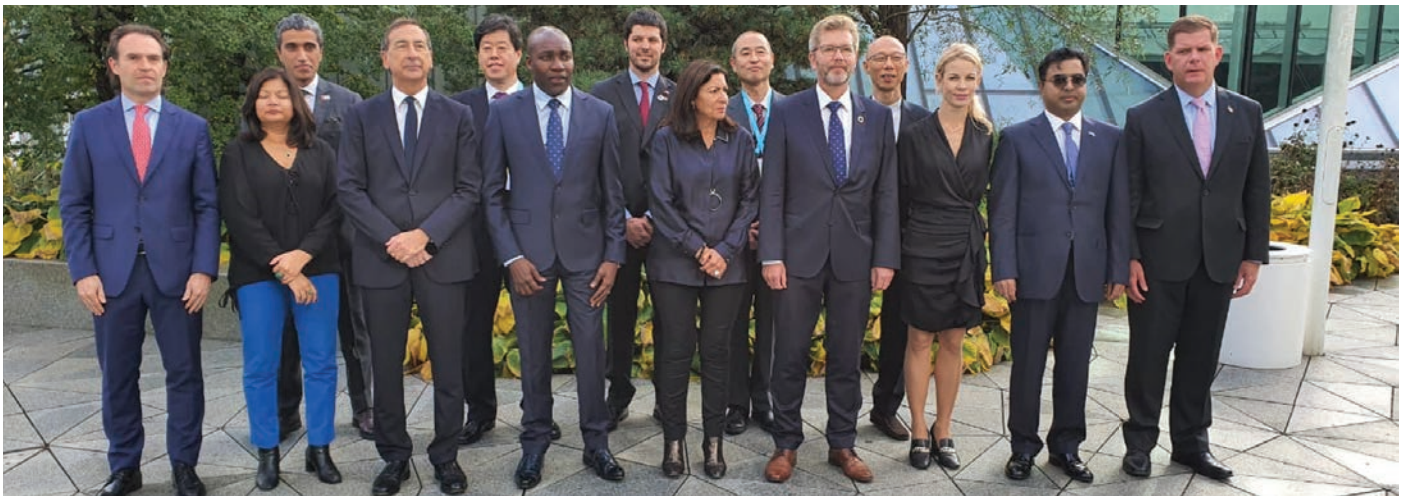
One of the highlights of 2020 was Durban's development of a business case for its Transformative River Management Programme.

Through engagement with the C40 Cities Climate Leadership Group, since August 2018, the City has developed a TRMP that focuses on transformative adaptation approaches to managing the City's riverine network. Modelling showed that a business as usual approach in the Ohlanga River would see a debilitating loss of ecosystem services which would compound existing service delivery- and development-associated problems in the catchment.

Adopting a basic management approach like Sihlanzimvelo, would claw back some of these losses, but a transformative approach would enable the system to recover significantly from its current condition.

This would further allow for all the benefits associated with a TRMP, like job creation for the most vulnerable, water quality improvement and biodiversity support, amongst others.

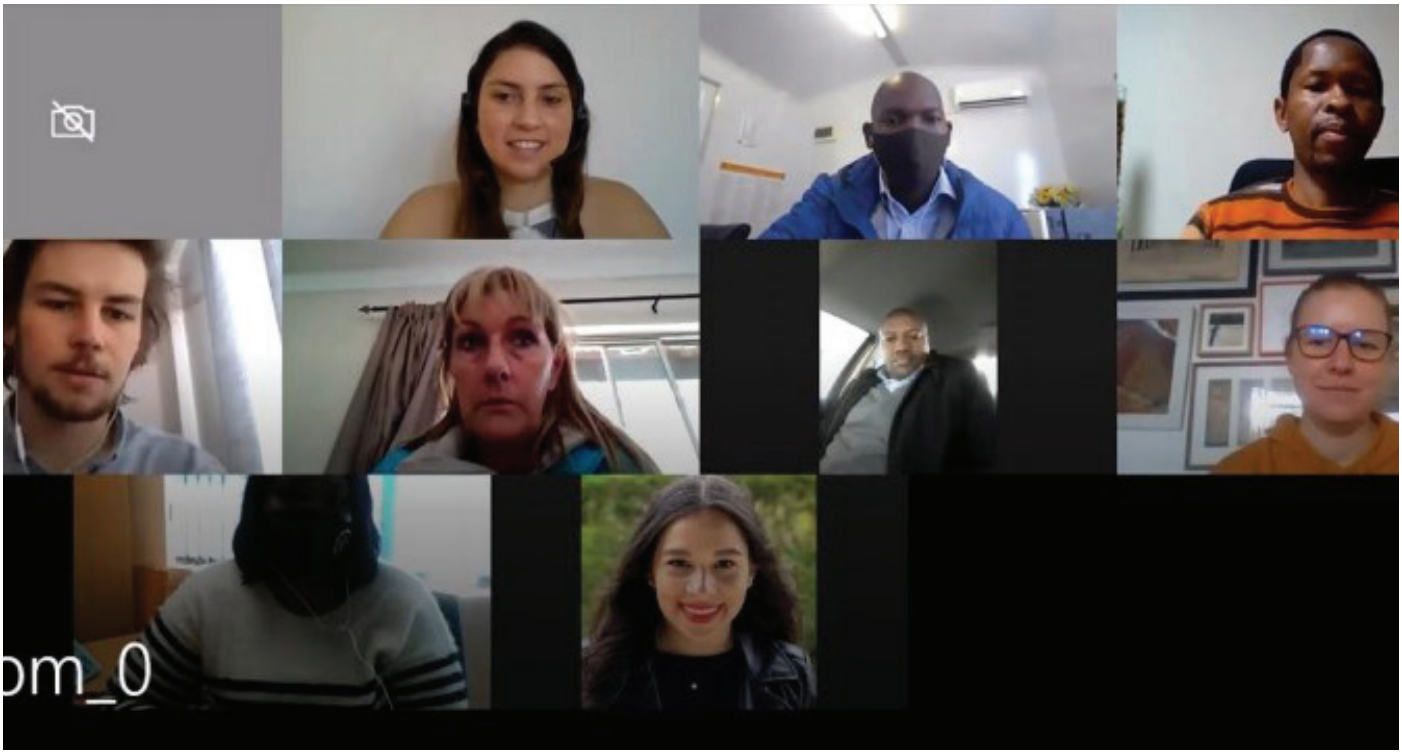
Another notable achievement during 2020 was the completion, adoption and launch of the Durban Climate Action Plan.



The CAP aims to keep Durban emissions in line with a global ambition to limit warming to no more than 1.5 °C and to prepare Durban's residents for climate change. The CAP was launched in a high-level online event in September. Related to this work has been the review of Durban's Climate Change Strategy, and the incorporation of the CAP into an integrated implementation plan for the DCCS. This work is ongoing and is planned to be completed during 2021.

4.2 KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA) Climate Activities

The year 2020 will be remembered as the most challenging year which distorted many planned activities. In the climate change space for the KZN Province, it was no different with many planned activities having to be rescheduled and undertaken virtually. Challenging as it was, it has taught us the term 'adaptation' in a true sense as we learned to operate under a new normal. The Province, working with ICLEI – Africa, hosted six virtual dialogues during the months of July and August 2020 on the development of MRV systems for the Energy, Transport, Waste and Agriculture, Forestry and Other Land Use (AFOLU) sectors.



4.2.1 Participation on International Platforms

KwaZulu-Natal is a member of the Under2 Coalition and the Premier serves as the Co-Chair for the Africa region. The Premier and the MEC of EDTEA represented the Province on the New York Climate Week 2020 as well as the ICLEI 9th European Conference: Manheim 2020 which both took place virtually on the 21st and 27th September 2020 and 30th September to 2nd October 2020 respectively. On both occasions the Province's projects and initiatives were highlighted as well as the efforts towards mobilisation of more African states to join The Climate Group (TCG).

4.2.2 Participation on International Platforms

EDTEA and the Department of Environment, Forestry and Fisheries (DEFF) co-hosted a multi-stakeholder interactive workshop aimed to profile available climate change tools and systems as well as data sharing opportunities. The purpose of the workshop was to familiarise provincial government, local government and other interested stakeholders with a variety of tools that form part of the Climate Change Information System (CCIS).

The outcomes of these tools will ensure alignment of provincial and local climate change policies and programmes to those at national level.
The Province, working with DEFF has developed a rain-water harvesting concept document for implementation at a ward level and is awaiting financing.

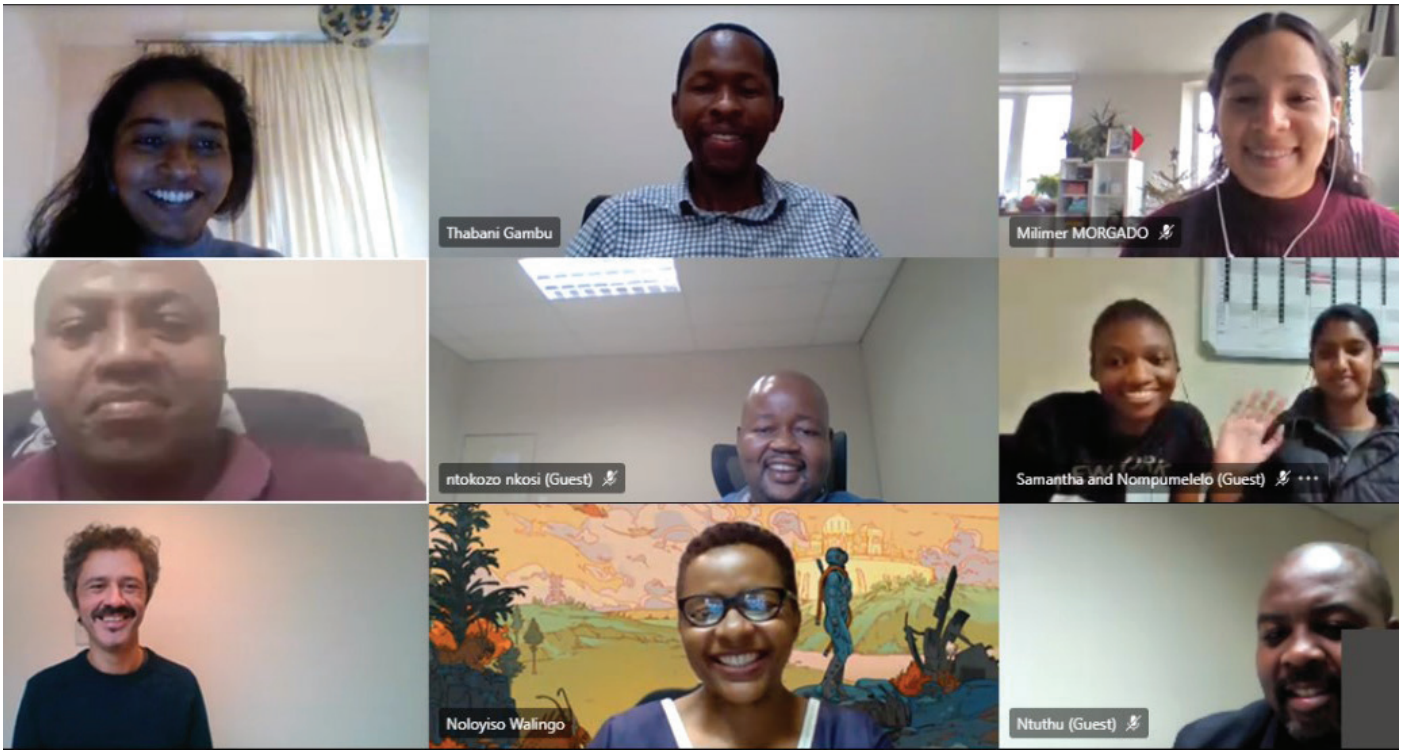
4.2.3 District and Local Municipalities Support

EDTEA is supporting four local municipalities to develop their Climate Change response plans, namely, Nongoma, Alfred Duma, Okhahlamba and Dr Nkosazana Dlamini Zuma (NDZ) local municipalities. Nongoma Municipality is in the process of completing their plan while Alfred Duma, Okhahlamba and Dr NDZ local municipalities have appealed for help from the KZN Climate Change Compact.

EDTEA is also continuing to assist district municipalities to finalise adoption of the Climate Change Response Plans of 2017 by respective councils.

4.2.4 Projects KZN Climate Footprint Project

This started in 2019 and is nearing completion with a baseline Greenhouse Gas Emissions Inventory expected to be concluded early 2021. Two technical support workshops as well as four webinars were held during the course of 2020. A second in-country Technical assistance was held in March 2020 whilst 3 webinars were held virtually during and post South Africa's hard lockdown. The last closing webinar took place on the 30th of November 2020, with focus mainly on the waste sector GHG emissions estimations.



4.2.5 Transformative River Management Programme concept

his concept is almost finalised across three municipalities in KZN, namely, Ugu District Municipality, Endumeni Local, and KwaDukuza Local Municipalities. These concepts will await funding (donor, grant, internal or other) for them to be fully fledged and implementable projects. There is an intention for EDTEA to support the rollout of the concept throughout the province.

4.2.6 EDTEA Planned Activities

Planning is underway for the KZN Mayors' Compact scheduled to take place in early 2021 with an aim to discuss local government climate change interventions, programmes, plans and projects. This is crucial as local government is the service delivery face of government and climate resilient and smart cities, towns and villages are crucial in the overall management of climate change impacts.

With this understanding, local government support will be central to the work of EDTEA and has been included in the 2021/22 Annual Performance Plan (APP) of the EDTEA's Climate Change Unit.

4.3 Mpumalanga Province Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA)

Climate change and its impacts are already exerting a toll on Mpumalanga's economy and social infrastructure, ecosystem services and biodiversity. Mpumalanga produces approximately 90% of South Africa's coal and is home to twelve of South Africa's coal fired power-stations. The Department developed a Provincial Climate Change Mitigation Strategy, supported by USAID South Africa Low Emission Development (SALED), covering GHG Inventory Report, scenario modelling approach and strategy with implementation plan.

After hosting the National Development Plan: Pathways for a Just Transition Stakeholder Engagement, the Department noticed that Just Transition was not effectively covered in the Strategy and requested support from ICLEI to develop a Chapter of Just Transition that will be included in the Mitigation Strategy, University of Cape Town has been appointed to develop the chapter and is still in a draft form.

Mainstreaming climate change to municipal plans is crucial to reduce climate risks, impacts and identify opportunities, the Department reviewed and commented on 21 IDP local municipalities to integrate the climate change elements, and further conducted a Let's Respond Toolkit in partnership with National Department of Environment, Forestry and Fisheries (DEFF), Department of Cooperative Governance and Traditional Affairs (COGTA) and South African Local Government Association (SALGA) to assist in transiting to a lower-carbon economy and climate resilient society in their planning processes.

4.4 Msunduzi Local Municipality

Building Efficiency Accelerator Program (through ICLEI Africa) for the assistance of building regulations (SANS 10400-XA)

In January 2020, the Msunduzi Municipality was approved for a leadership grants for technical assistance of building regulations (SANS 10400-XA) implementation audit which was facilitated through ICLEI Africa (this process was undertaken by the city of uMhlathuze, KwaDukuza and Msunduzi Municipalities).

ENGAGEMENTS	OUTPUTS
1. An audit to determine the implementation of the building regulations (SAN 10400-XA)	1. In person audit on site (this was amended to online discussions due to the COVID 19 restrictions) 2. Audit report
2. An audit to determine the skills gap that building control and building inspectors are experiencing	1. Capacity assessment questionnaire 2. Report of findings of the skills audit
3. Based on the skills gap audit, participants to undertaken one joint training to upskill and build capacity	1. Training session 2. Training session report (ICLEI)
4. Develop an "audit methodology toolkit" that can be implemented to audit, upskill and build capacity in other municipalities in South Africa on the SANS 10400 XA regulations	1. SANS 10400 XA audit toolkit

5. CITY RESILIENCE PROGRAMME

The Cities Resilience Programme (CRP), led by the South African national government's Department of Forestry, Fisheries and Environment (DFFE) has continued to work through the metropolitan municipalities in the country, to prepare for climate change. Through its Cities Support Programme the department convened an online workshop on Climate Resilient Capital Investments on 7th October.

The aim of the workshop was to strengthen capacity within metros to package and prepare capital investment projects and mobilise private investment. This was further supported by the production of a practical systematic guide towards unlocking municipal climate finance by the Department. Officials from participating metros in the CRP were invited to review the DEFF's National Climate Change Adaptation Strategy, which was finalised during 2020.

The Strategy provides guidance for cities in South Africa to develop and implement their adaptation programmes. In another related programme the government's Treasury has led a process to develop a set of indicators for multiple sectors, including climate change. These indicators will support monitoring and evaluation processes in the country.

6. EPIC-N

Educational Partnerships for Innovation in Communities (EPIC) is a unique but radically simple model that systematically matches the real-world needs of cities and local governments with the skills, intellectual resources and creativity of university students and faculty.

The matching process is designed to enhance the capacity of cities and communities to become more sustainable, resilient, and adaptable to climate change.

An EPIC partnership fosters community innovation and leverages the largely untapped expertise concentrated in a university geared towards tackling real-life sustainability challenges within a community or city, which in turn provides university students the applied learning experiences that they need to further develop professionally.

The EPIC model is highly adaptable to different governance structures, localities, cultures and content areas. Moreover, EPIC partnerships and EPIC networks tend to be self-sustaining, self-supporting and self-led. The EPIC-Network (EPIC-N) is the collection of institutions that have successfully adopted this new model for community innovation and change.

There are currently 38 institutions implementing this model, mostly in the United States of America. In addition, because of this growth in the number of institutions implementing the model, EPIC-N members have established a secretariat, along with an executive and advisory board, to support the information and training needs of its members, document and share the growing number of successful EPIC projects undertaken and to continue to expand the network.

Now ten years in the making, EPIC-N members have completed well over 1200 projects resulting from various implementations of the EPIC model representing hundreds of thousands of student hours devoted to these projects.

6.1 EPIC Africa

In an effort to build more confidence in the transferability and adaptability of the EPIC model to a Global South context, the EPIC partners hosted a 2-day regional-scale training on the EPIC model in Cape Town, South Africa in November of 2017.

This event, funded by the US National Science Foundation and UNEP's Global Adaptation Network was limited to officials from southern and eastern African cities and universities. The model and the training were so well received that the trainee pairs in attendance elected to form the first EPIC network outside of the US and dub it the EPIC Africa network. Emerging from this training were three early adopters who have gone on to initiate their own programs in Lusaka (Zambia), Durban (South Africa) and Nairobi (Kenya).

These programs have highlighted the versatile and adaptive nature of the EPIC model as well as its suitability as a cost-saving measure (especially in Lusaka's case). After its establishment, the EPIC Africa network remained active with three core leader members of the network implementing projects in their respective home organisations using the EPIC partnership model and meeting online monthly with assistance from the EPIC-N Secretariat.

From 3rd – 6th February 2020, representatives from African cities visited Durban for a training workshop for EPIC Africa, which signified the growing international attention garnered by the approach. This first African-led EPIC training workshop was funded and organized by START International and took place at the Durban Botanic Gardens. Twenty-two local and national African governments were represented at the Durban workshop, along with staff from their local universities; the workshop aimed to build on the successes of the three pilot projects emerging from the 2017 training, and to expand the model across the continent.

ETHEKWINI MUNICIPALITY

Following the training event participants were energised to create their own EPIC programmes but progress was hampered as the Covid-19 global pandemic spread through Africa. Unable to engage in face-to-face meetings to introduce EPIC in their organisations, most participants were not able to establish their own programmes. A notable exception was County Government Mombasa who established their EPIC programme with the Technical University of Mombasa and produced a mobile sanitation solution, in the form of tunnels for users of the ferry in the County.

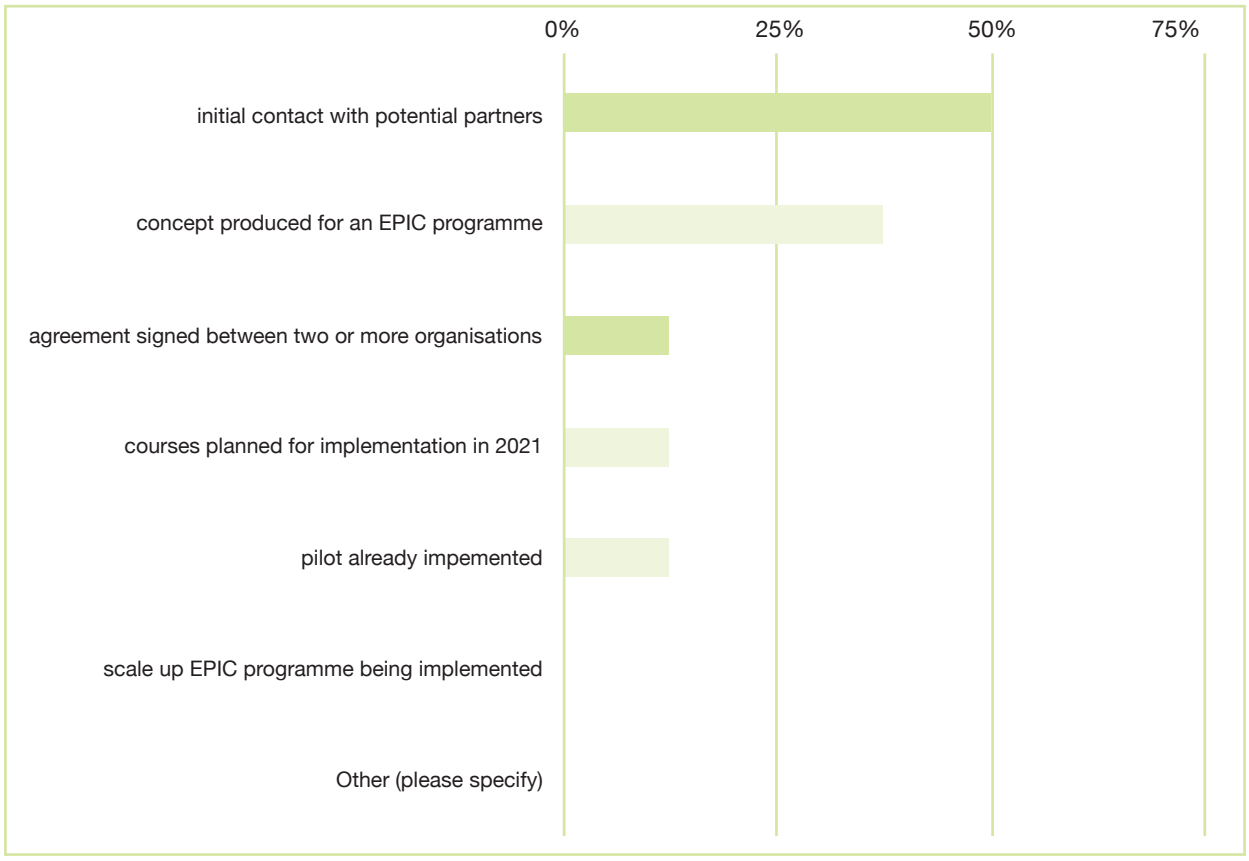
This serviced approximately 500,000 people per day. To date, a number of participants have now signed their agreements between universities and their local governments, and some progress is now being made.

During the hard lockdown period in South Africa, from March to August, the EPIC Africa leadership developed a five-year strategic framework for EPIC Africa and a job description for a network coordinator to support activities of members. The network continued to meet online in monthly network calls. Engagement within the monthly EPIC Africa network meetings was consistent and a number of outreach events were conducted included a presentation to the Association of Africa Universities. During the year, the EPIC-N secretariat provided invaluable support for EPIC Africa, and that included access to the EPIC-N members commons and the setting up of the EPIC Africa website.

At the conclusion of 2020, a survey was conducted by the EPIC Africa leadership of progress to date, and the following emerged (taken from the eight respondents by year end, although the survey is still active and receiving responses): at least 75% of respondents have at least either made initial contact with potential partners, or have produced a concept note to start planning an EPIC programme. It is clear that while there is a broad intention to begin programmes, very few have yet signed any agreements or progressed further than this stage. From meetings of the network during 2020, network members consistently reported being hampered by Covid-19 in their efforts to initiate programmes.

This reasoning is supported by the data below and was one of the reasons why the EPIC Africa leadership did not progress to the next step of securing a network coordinator through EPIC-N.

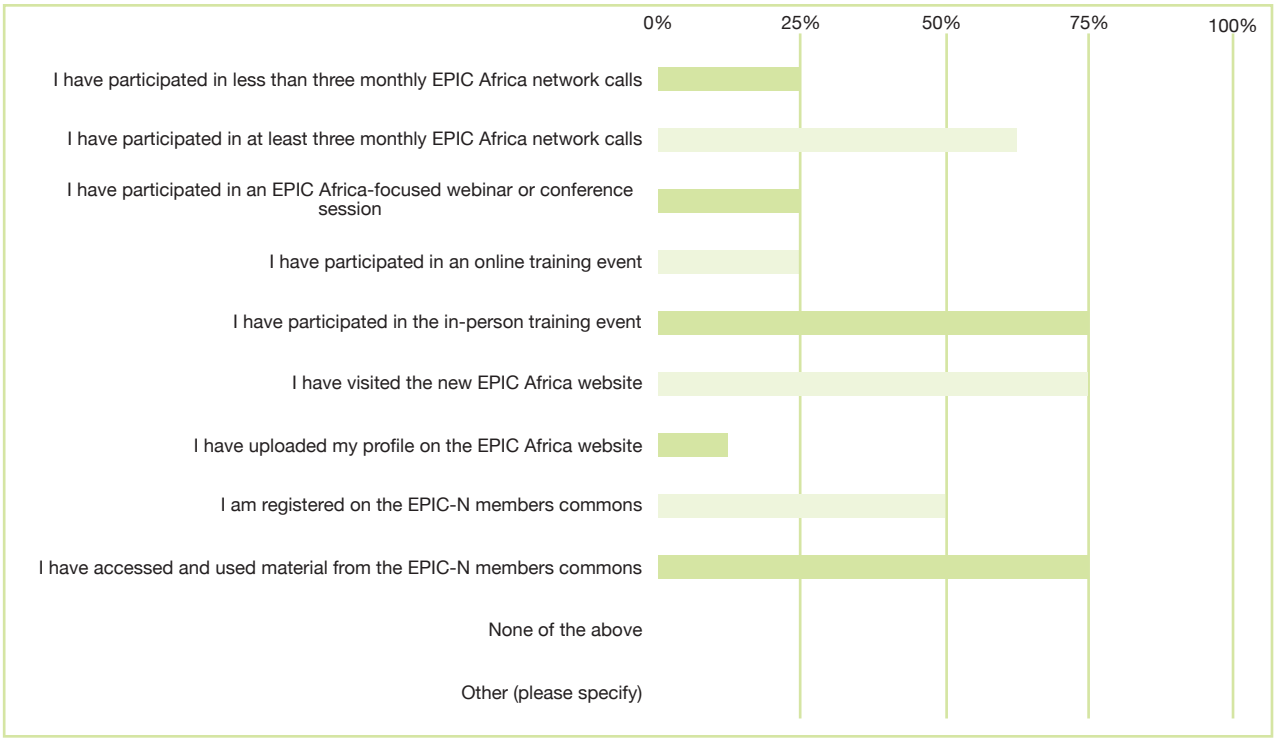
Percentage survey responses (n = 8) of EPIC Africa network members' progress in implementing programmes in their home institutions.



The second survey question aimed to find out what activities network members had engaged in during 2020. Encouragingly, all most two thirds of respondents participated in at least three of the monthly network calls during 2020. Three quarters of respondents participated in the in-person training event in February, have visited the EPIC Africa website and have accessed materials from the EPIC-N members' commons. At least half of the participants are registered on the members' commons (thanks in no small part to the efforts of Mr Marshall Curry), but only one participant has loaded his profile (from Durban). Participation in online events was also only at 25%.

ETHEKWINI MUNICIPALITY

Percentage survey responses (n = 8) of EPIC Africa network members in network activities during 2020.



Whilst the sample size of this survey is low (but is expected to grow as more respondents provide their inputs early in 2021), is does show that EPIC Africa network members are keen to begin programmes in their home institutions and have engaged in online meetings and with the EPIC Africa website. It is hoped that, during 2021, the Covid-19 pandemic will subside to allow members to really get going with their programmes, and for the EPIC Africa leadership to implement the strategic framework.

7. URBAN CLIMATE CHANGE RESEARCH NETWORK

The Urban Climate Change Research Network (UCCRN) was very active during 2020, with planning for the Third Assessment Report of Climate Change in Cities (ARC3-3) well underway, and the process to identify lead and contributing authors was completed for the first three chapters during 2020. As a regional Hub, Durban has participated in this process.

By the end of the year, the collaboration on the special edition of the Ocean and Coastal Management journal on climate change adaptation in small coastal cities and towns was ready for final submission to the journal following peer review. This should be complete early in 2021.

8. DAC COMMUNICATION

As the website hosting contract has ended the four articles that were uploaded could not be posted. The DAC Secretariat is working towards getting the website working properly again.

The four articles encompassed a summary of the DAC Compact meetings for July and November 2020, the Miji Bora exchange visits that focused on the TRMP and Sanitation issues, the EPIC workshop of February 2020 and the EPIC Durban pilot report that was produced.

9. DAC EVENTS

9.1 International events

9.1.1. EPIC Africa presentation to AAU:

On 29th July, the EPIC Africa leadership presented the EPIC model to representatives from the Association of African Universities via Zoom. The purpose of the meeting was to present the EPIC model that the EPIC Africa network is trying to roll out on the African continent.

The EPIC Africa network has a number of cities and universities that are establishing EPIC programmes and some are up and running. This presentation focused on what the EPIC Model is and provided some examples on how is being implemented, and how the EPIC leadership could work with AAU and Universities.

Dr Sean O'Donoghue presented the concept document of the EPIC Africa network and Mr Marshall Curry, from EPIC-N, presented the EPIC website, providing detailed information about the site and its usefulness.

Following the presentation, questions of clarity were dealt with and it was decided to plan regional presentations of the EPIC model in African universities.

9.1.2 ICLEI Africa Rise:

The EPIC model fundamentally drives systems change by linking cities and universities in collaborative problem solving that unlocks both the power of communities and of students, who bring youthful energy and innovation to problem solving.

The model is mutually beneficial for both cities and universities by fostering innovation in university teaching, creating experiential 'real-life' learning for undergraduate students, and co-developing solutions with communities that address specific development challenges.

Through the EPIC approach, capacities for actionable research are strengthened, scientific, tacit, and indigenous knowledge streams are integrated, and tangible benefits are realized for low-income, disadvantaged communities, especially for women. EPIC is a low-cost endeavour that is particularly suited for implementation in Africa – drawing on the innovation of youth, saving budgets and benefiting communities directly. Importantly, the EPIC model can be applied in a wide range of contexts and align easily with existing projects to add value.

Given its inherent adaptability and low cost, EPIC can be expanded across the African continent for greater impact. The support further implementation of EPIC in Africa, ICLEI – Local Governments for Sustainability, hosted an EPIC session as part of their Africa Rise series on 13th October. The session was well attended, and participants learnt how to implement an EPIC programme within their own home organisations to grow local capacity and deepen transformative research. Participants also learnt about improved civic action and how to ensure improved collaboration in the face of climate change.

9.1.3 ICLEI Daring Cities:

Another very similar EPIC Africa-focused event, this time hosted by the Global Secretariat, was convened on 27th October. This event set out to answer a number of predetermined questions: How does one ensure that initiatives achieve substantial and measurable improvements long after a project has ended? How do projects ensure systematic institutional shifts that leave a long-lasting impact? How does an initiative ensure ongoing learning that continues well into the future? Answers to these questions were postulated by representatives from the Future Resilience for African Cities and Lands (FRACTAL) project as well as the Educational Partnerships for Innovation in Communities – Network (EPIC-N), in terms of project design and sustainability.

There is a growing network of African cities that since 2017, have been implementing the EPIC model locally to great effect while simultaneously addressing a number of SDGs and the notion of inclusivity.

This ever-expanding network of local government adopters of the EPIC model is now known as the EPIC Africa regional network. At its core, the EPIC model is a simple yet powerful and time-tested tool that brings the intellectual and skill-based resources embodied in local university faculty and students to the service of local governments and communities as a means of enhancing local government capacity to address any number of issues such as adaptation, enhancing resilience, flooding, disaster management, waste management and much more.

Though having originated in the US in 2009, the model has proven to be sufficiently flexible and fully capable of conforming to local norms and customs in widely diverse settings and circumstances internationally.

Similarly, FRACTAL is a trans-disciplinary group of researchers and city officials from around the world who actively aim to advance scientific knowledge about regional climate responses to human activities.

Together researchers and practitioners are working to co-produce relevant knowledge that will support resilient development pathways and enable decision-makers to better integrate pertinent climate knowledge into their resource management decisions and urban development planning.

This session brought together local government officials, academics and members of both initiatives in an interactive panel-style session. Panellists reflected on the following questions:

- In your opinion, what are some of the biggest barriers and opportunities to “continuing the learning”?
- How do these learning models fit local level knowledge needs?
- Could the EPIC model represent a transformative paradigm for the way that universities operate and relate to the needs of local governments and communities where they reside?
- What is the reaction of local government officials and community leaders to both the EPIC and FRACTAL process?
- How important is building relationships/connections between different disciplines? Can you please expand by giving examples/cases?

Whatever the reason, exiting from a project, programme, country, or partnership is no easy task for anyone involved. The envisioned outcome included having an action learning component that will involve reflecting deeply, sharing learnings and methods for building a legacy at local level long after a project or initiative has ended. Numerous NGOs and city partners are facing the challenge of closing projects and programmes and withdrawing from countries and partnerships while still ensuring lasting changes contributing to international targets (such as SDGs etc.). It is therefore our responsibility to build long and sustainable initiatives.

9.1.4 ICMA Unite Conference:

Dr Sean O'Donoghue, DAC lead and co-Chair of the EPIC Africa network, presented the EPIC model at the International Cities/ Counties Management Association's virtual UNITE digital event on 23rd September.

The ICMA is the premier association of local government professionals committed to developing and promoting best practice in governance at the subnational level. ICMA represents more than 13,000 local government professionals committed to enhancing the quality and performance of local government administration worldwide. Since 1914, ICMA has implemented over 500 programs in more than 70 countries, delivering hands-on assistance by tapping into the knowledge and skillset of its members who provide long-term learning, mentorship, and partnership opportunities for their counterparts in local government.

In the Climate Change and Resilience Challenges session, participants learnt about climate change and resilience challenges that local governments face and innovative solutions and action plans they developed as climate adaptation response including energy efficiency programs from US and Denmark, and African challenges with climate change, and Community Ecosystem Based Adaptation in South Africa. Solutions put forward from Durban include a strong dependence upon the City's natural resources and communities in responding to climate change, and engaging in innovative partnerships, like EPIC.

9.1.5 Miji Bora – Second Project Symposium:

On 16th September, Miji Bora project leaders convened a mini symposium with attendees from Mombasa, Durban and the Western Indian Ocean Marine Science Association. The symposium provided an update for each component of the project, including the situational analysis, Smart future thinking, the geospatial component, mangrove and carbon and peer-to-peer and smart city prototyping.

9.1.6 WIOMSA Annual Grantees meeting:

On the 16th – 18th November, the Western Indian Ocean Marine Sciences Association convened a virtual annual grantees meeting for their Cities and Coasts programme. The Miji Bora project presented their progress at the event. Key findings that were presented include:

• Analysis of Policy Documents
- A comparison between integrated developments plans for Mombasa and eThekwini Municipality, for the planning periods, 2012-2017/2017-2022, revealed that terminologies/concepts related to the international discourses on smart-sustainable cities were more prevalent in eThekwini plans than in Mombasa plans. For example, climate change is mentioned 143 times in eThekwini plans compared with only 13 times in Mombasa plans. In eThekwini, the words sustainable, smart and digital are used 390, 20 and 26 times respectively, while in the Mombasa plans, these are used 55, 2 and 7 times.
- Smart and sustainable issues are better integrated into the policy contexts in eThekwini than in Mombasa
- The minimal use of concepts relevant to the international discourse on smart-sustainable cities in Mombasa reflects little impact of the political/policy milieu in characterised actions towards a smart sustainable city.

• Situational Analysis (Water and sanitation)
- Water supply and sewage systems are characterised by a series of inequalities in access resulting in a ''dual economy" (informal less serviced areas & formal well-connected areas).
- The pyramidal colonial racism paved the way for post-colonial classism whereby poor people living in the informal settlements are disproportionally affected by the water and sanitation backlogs.
- Increased funding for the water and sanitation sector, coupled with changes in policies have not produced the desired results.
- The continuing water and sanitation problems are a manifestation of governance and policy inefficiencies. Such inefficiencies lead to scarcity even in the presence of physical water abundance.

• Situational Assessment of Mombasa Natural Capital (Mangrove).
- The peri-urban mangroves of Mombasa are not pristine with Tudor creek and Port Reitz having lost 70% cover in the last 29 years as a result of over-exploitation of resources, habitat conversion, pollution and climate change.
- Restoration efforts have been initiated by the community together with civil society, county government, private sector and the Kenya Forest Service.
- There is a lot of willingness among the community to

participate in mangrove restoration and conservation activities with 68.2% of the respondents willing to pay for the conservation of mangrove forests.
- Situational Analysis (Socio-economic impacts of Covid-19 restrictions in Mombasa).
- A survey was conducted for a preliminary assessment of the socio-economic impact of Covid-19 during government-imposed restrictions. Findings from the survey showed:
- 26% of women are not economically engaged, and only 15% are employed, while men make up 15% and 29% of the two categories respectively;
- Only about 11% of the women in self-employment could work from home, and of the 28% of the women in casual employment, none could earn a living by working from home;
- Problems associated with internet access and reliability for those who worked from home accounted for 31%;
- Lack of access to internet for women is an additional stratifier of the gender inequalities that could exacerbate adverse differential impacts of Covid-19.
- Peer- to- Peer learning exchanges;
- The first exchange visit found several challenges facing Mombasa County in solid waste management and water and sanitation. For example, the 47% of waste collected is not levied by the government thus handing over the part of the responsibility of garbage collection within Mombasa to private sectors. Key issues facing solid waste management include illegal dumping, mixed waste, poor road quality to the main dump site and financing. The report from this visit is referenced in the Durban Adaptation Charter 2019 annual report.
- Due to Covid-19, the second exchange visit to eThekwini Municipality for Mombasa city officials was postponed to a later day and the project started webinar sessions. Two live webinar sessions were concluded, one on Transformative River Management Programme (TRPM) and the second on Sustainable sanitation. The output from the TRMP webinar resulted in the implementation of the Mtopanga TRMP in Mombasa county.
- Economic valuation of ecosystem services:
- is of great importance and cannot be over emphasized. For example, the average value of Tudor creek mangrove forest was estimated at 3586.3 USD/ ha/ year indicating that the forest is of high value and therefore, there is need for concerted efforts for sustainable management. The results revealed that illegal harvesting, pollution and infrastructural development are the major threats facing mangroves; allowing the county government to identify investment priorities for mangrove restoration for suitable degraded sites.
- Overall, the above findings provide a snapshot the disparities, inadequacies and current investments in social, economic and ecological aspects of the city of Mombasa. This understanding is important in designing long term sustainable interventions.

Following the grantees meeting the WIOMSA steering committee have undertaken to provide formal reports back to projects in their programmes. The Miji Bora project team is waiting upon this report.

9.2 Local/ National Events

9.2.1 Climate Smart Disaster Management Webinar:

Hosted by the South African Local Government Association (SALGA), who co-lead the Central KZN Climate Change Compact, the webinar aimed to transform the local government space to adopt smarter, cleaner mitigation and adaptation systems, while responding to climate related disasters.

The Discussion topics were as follows:
- How to use technology to Analyse and manage causes of disaster?
- Effectiveness of early warning systems?
- How to reduce social and economic vulnerability of hazards?
- Improved preparedness of adverse events in municipalities?

The session started with a discussion on how Covid-19 has impacted disaster preparedness in South Africa, and how responses may be similarly impacted. Solutions for KZN municipalities were then put forward.

9.2.2 LIRA

The aim of the Transforming southern African cities in a changing climate project is to better understand the extent to which Transformative Adaptation (TA) has been envisioned in southern African cities, explore interventions that have transformative characteristics, unpack how these might be more transformative in the future and, importantly, draw out key messages about TA for southern African cities. Using case studies in Durban (South Africa) and Harare (Zimbabwe), the project is contributing to understanding how (or if) theoretical ideas of TA play out in southern African cities. Considering both cities are faced with the challenge of managing water under changing climate conditions, water resilience projects have been selected as case studies in both cities. The project is part of the Leading Integrated Research in Africa (LIRA) 2030 programme.

To date, knowledge holders in Durban have been involved in selecting cases of TA in Durban, as well as co-defining characteristics of this approach (November 2018). After this initial step, one-on-one and focus group interviews were undertaken with those involved in the cases identified, ranging from project managers to implementers on the ground, using the characteristics of TA that were co-defined in the first lab to explore the transformative extent of these cases. The aim of the fourth learning lab, convened on 24 – 25th March, was to share findings from the full analysis of the Durban and Harare cases, as well as consider next steps and co-design useful outputs from the project.

A portion of the event was also dedicated to thinking about how we track transformative change (linking to the Sustainable Development Goals). The video that was produced alongside the research process ("Changing course") was screened. A key outcome of the LIRA project was the inclusion of TA in the business case for Durban's Transformative River Management Programme.

9.2.3 Durban Research Action Partnership Annual Student Symposium:

On 23 November 2020, the annual D'RAP year end student symposium was held virtually via Zoom. Initially, the symposium was to be a hybrid of in-person and virtual attendance but a fully virtual symposium was decided as a safer and more accessible option in light of Covid-19 precautions.

This event allowed students in the programme to present their work and for some discussion on their research as it would translate into broadening knowledge and implementation into management and practice.

There was about a fifty-fifty percentage attendance from eThekwini and UKZN. Prizes were given to the three best student presenters with Maqsooda Mahomed (PhD) taking first prize, Leawin Africa (MSc) second, and Wenzile Shinga (MSc) third.

All presenters gave high quality presentations by showcasing the applied nature of their work well and good discussion about the research followed.
TRMP Riverine Community event

On 25th August, members of Durban's riverine community were invited to participate in a stakeholder engagement session which was undertaken as part of Durban's Transformative River Management Programme's (TRMP) stakeholder engagement process.

Through the C40 Cities Finance Facility (CFF) partnership with Durban, in 2018 a TRMP was established which aims to adapt 7 400 km of streams and rivers in the city to the flooding, drought and higher temperatures that can be expected from climate change. Following the launch of the programme of that year, significant progress has been made, and a need was identified to consult with our KZN riverine community to a) provide an update on the programme and b) get inputs on future work packages e.g. Cost Benefit Analysis (CBA) and Business Cases. Durban's Riverine Community is one of the stakeholder groups which were engaged to provide progress on the TRMP work.

The engagement was very positively received and maintained the good engagement between the City and its residents in terms of riverine management.

10. DAC IMPLEMENTATION 2021

As South Africa welcomes in the new year, it is clear that Covid-19 has not been beaten yet. Despite the unprecedented speed at which vaccines have been developed, it is clear that it will be some time before enough doses have been given to achieve herd immunity, assuming that the vaccine is effective against new variants of the disease which are emerging.

At the time of writing, South Africa has returned to level 3 of its lockdown protocols, and it is remains unlikely that any in-person meetings will be allowed for the first half of 2021. With this in mind, it is very likely that implementation for Miji Bora, CKZNCCC and EPIC will remain virtually based.

During 2021, the DAC Secretariat will continue to focus on these three key programmes and will seek further opportunities for engaging in city-to-city partnerships once Covid-19 is beaten.

11. CONCLUSION

This has been a trying year, but the DAC Secretariat is grateful for the continued support for implementation of climate change adaptation actions within cities and organisations, especially of the Global South.

The leadership of the City of Durban, local Compact members, other African cities and that of organisations working with the DAC has continued to be supportive of the work being done. Special thanks go out to partners, especially from the USA, who have worked tirelessly to support efforts within the EPIC and DAC Hub and Compact programmes.

During 2021, the DAC Secretariat will continue to support project implementation in our DAC members, particularly supporting the two Compacts in South Africa and the Miji Bora project. Let's hope that 2021 will see the widespread roll-out of an effective Covid-19 vaccine and our lives returning towards normality again.

ACRONYMS

°C	Degrees Celsius
AAU	Association of African Universities
AFOLU	Agriculture, Forestry and Other Land Use
APP	Annual Performance Plan
ARC3-3	Third Assessment Report of Climate Change in Cities
C40	Cities Climate Leadership Group
CABs	Community Ablution Blocks
CAP	Climate Action Plan
CBA	Cost Benefit Analysis
CCIS	Climate Change Information System
CFF	Cities Finance Facility
CGM	County Government of Mombasa
CKZNCCC	Central KwaZulu-Natal Climate Change Compact
COGTA	Cooperative Governance and Traditional Affairs
COMRED	Coastal & Marine Resource Development
COP17	Conference of the Parties
Covid-19	Coronavirus disease 19
CRP	Cities Resilience Programme
DAC	Durban Adaptation Charter
DARDLEA	Department of Agriculture, Rural Development, Land and Environmental Affairs
DCCS	Durban Climate Change Strategy
DFFE	Department of Forestry Fisheries and Environment
DEWATS	Decentralized wastewater treatment system
DRAP	Durban Research Action Partnership
ECO_SAN	Ecological sanitation
EDTEA	Department of Economic Development, Tourism and Environmental Affairs
EPIC	Educational Partnerships for Innovation in Communities
EPIC-N	EPIC-Network
EWS	EThekwini Water and Sanitation

FRACTAL	Educational Partnerships for Innovation in Communities
GHG	Greenhouse Gas Emissions
ICLEI	Local Governments for Sustainability
ICMA	International Cities/ Counties Management Association
IDP	Integrated Development Plan
KZN	KwaZulu-Natal
LIRA	Leading Integrated Research in Africa
MEC	Member of the Executive Council
MRV	Measuring, Reporting and Verifying
MSc	Master of Science
NDZ	Nkosazana Dlamini Zuma
P2P	Peer to Peer
PhD	Doctor of Philosophy
SALED	South Africa Low Emission Development
SALGA	South African Local Government Association
SANS	South African National Standard
SDGs	Sustainable Development Goals
START	SysTem for Analysis, Research and Training
TA	Transformative Adaptation
TCG	The Climate Group
TRMP	Transformative River Management Programme
UCCRN	Urban Climate Change Research Network
UNEP	United Nations Environment Programme
US	United States
USA	United States of America
USAID	United States Agency for International Development
USD	United States Dollars
VIPs	Ventilated Improved Pit latrines
WIOMSA	Western Indian Ocean Marine Sciences Association

Climate Protection Branch
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