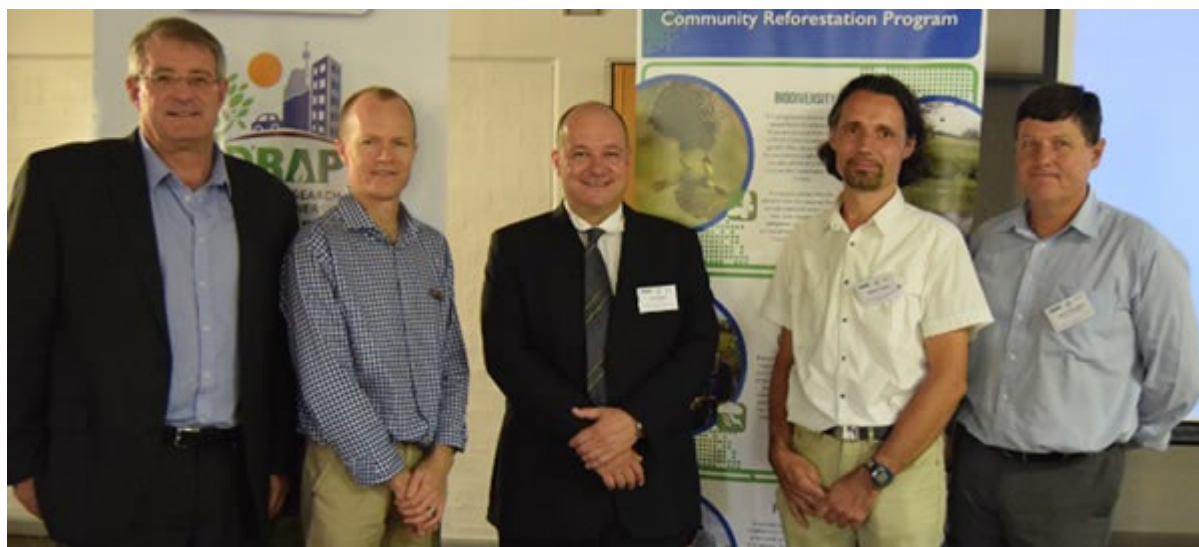


Durban Research Action Partnership

The Durban Research Action Partnership (DRAP) was officially launched on the 30th of January 2017 at the Durban Botanical Gardens. The research partnerships between local governments and their academic institutions represents a win-win situation where the power of research institutions can be harnessed to develop both capacity and knowledge that is useful to the local government. Although this research partnership was officially launched beginning of 2017, eThekweni Municipality and [University of KwaZulu-Natal](#) had involved in number of research programmes prior the launch, with the first city-funded phase of the Global Environmental Change research programme starting in 2011. These research programmes aim to generate knowledge and learning to address the gap between scientific research, policy development and management within a local government.

The transdisciplinary nature of this research programme, where city officials and academics from University of KwaZulu-Natal co-developed applied research questions to help the city manage novel challenges like climate change, biodiversity, etc. continues to be cutting edge in developing solutions responsive to city challenges. The city has to date completed three three-year phases of GEC, providing funding to a total value of R10.5 million. The research programmes within DRAP have yielded positive results, not only in improving our understanding of ecological infrastructure but also in building human capital and capacity for both university students and municipal officials.



Together at the launch of D'RAP are (from left) Dr Albert van Jaarsveld, Mr Errol Douwes, Professor Rob Slotow, Professor Mathieu Rouget, and Dr Sean O'Donoghue.

Climate change is cross cutting in nature, affecting all municipal departments, so climate change research is transdisciplinary (across municipal and university), transversal and multi-disciplinary across multiple line functions within the municipal organogram. The research identifies and unlocks solutions to climate change challenges which hinder service delivery. There is so much that still needs to be determined around climate change, how it affects different sectors and human well-being. For example, research on understanding the flood vulnerability in informal settlements: Integrating geospatial techniques for Climate risk mapping in the eThekweni municipality. Answering these and a

wide range of other research questions is vital for the city to better prepare for future climate change impacts.

D’RAP is associated with various other initiatives and programmes and the D’RAP Steering Committee acts as an anchor point by linking them together. The School of Built Environment and Development Studies (BEDS), and D’RAP have continued with projects which are beneficial or contribute to the work of the city, with the Educational Partnerships for Innovation in Communities (EPIC) programme very active in addressing risk and vulnerability in residents from the Quarry Road West Informal Settlement. The second phase of Sustainable and Healthy Food Systems (SHEFS) programme will contribute to eThekweni’s Agroecology Unit and food cities programme by helping with a review of food policies and providing research findings to support the City’s development of a Food Policy that mainstreams climate change impacts.

Global Environmental Change Research Programme – Phase Three: Rivers Source to Sea (2019 – 2021)

The third phase of the GEC research programme, concluded in December 2021, broadened its scope of work from being biodiversity focused to guiding the implementation of all ten themes of Durban Climate Change Strategy (DCCS), brought together around the central unifying theme of “*Rivers: Source to Sea*”. This was achieved through undertaking multi-disciplinary research projects which related to the ten DCCS themes.

This phase addressed some of the shortcomings of the previous phases (Phase 1 and 2). Firstly, with the development of the theme, “Rivers: from source to sea”, was chosen after engagement in a transdisciplinary process between UKZN and EM stakeholders. This linked biodiversity, climate and people as rivers are the “lifeblood” of ecosystems and communities. Social aspects of the GEC programme were previously under-explored, so the development of this theme aligned research with the global Sustainable Development Goals (SDGs). EPIC has also been expanded after the pilot in 2019 through the School of Built Environment and Development Studies (BEDS). A research coordinator was appointed for the next few years and the programme is funded through the D’RAP allocation of the NRF Community of Practice (COP) Programme. This has helped D’RAP expand more into social aspects.

There have been notable outcomes so far from those students who are further along. The first is a paper submitted to the *South African Journal of Science* for publication from one of the PhD students looking at lightning detection and monitoring titled: “Lightning monitoring and detection of techniques: progress and challenges in South Africa”. The second is a working model of potential scenarios of future land use change for two river catchments, the uThukela and uMngeni, which is to be used to assess future streamflow responses.

The COVID-19 pandemic resulted in many changes in 2020, with disruptions continuing into 2021. Some post graduate students were allowed back on campus from June 2020 if they required access to lab facilities etc. otherwise, they continued to work from home. Through successive waves of Covid, restrictions were tightened and then eased up as the year progressed, with some students were set back in progress with their studies. As a contingency, students’ supervisors were encouraged to guide students to tackle aspects of the research that could be done at home, for example manuscript preparation and literature reviews to ensure the continuation of research. Students were working off campus and to assist were provided with 1GB data packages once off during lockdown from UKZN, so they had internet access to continue their studies remotely.

A total of nine MSc students, one PhD student, three post docs were supported under GEC phase three. D’RAP funds did not only provide bursaries but provided opportunities for work experience. This has helped with capacity building by giving students exposure to work so they can build their CVs, and this was in line with the objectives of building capacity to early career researchers. Nine students were appointed (i.e. **5 Honours and 4 Masters**) for two months at the standard UKZN pay rates (**3 Male, 6 Female, 5 Black, 2 Indian, 1 Coloured, and 1 White**) in semester one. Four of these contracts were extended for two more months after review of progress (i.e. **2 Masters and 2 Honours; 2 Male, 2 Female; 1 Indian, 1 Coloured and 2 Black**). Nine students were also appointed (i.e. 6 Honours and 3 Masters) for two months again at the standard UKZN pay rates (**3 Male and 6 Female, 9 Black**) in semester two.

Global Environmental Change Research Programme – Phase Four: Implementing the Durban Climate Change Strategy (2024 – 2027)

The start of GEC phase four was delayed due to funds being reprioritised to respond to urgent and pressing issues for the city, such as dealing with the infrastructure damage which was caused by floods in April 2022. The damages were estimated to be above R1.5 billion and that meant that most of the municipal budget was channelled in fixing the damaged infrastructure. The GEC phase four programme officially started in February 2024, and it will run for three years, and finances need to be secured for the fifth phase to ensure continuity. Funding to implement GEC phase four was secured from the municipality, and the programme officially commenced in early 2024 following a transdisciplinary research workshop series to determine the focus of the research agenda.

A transdisciplinary workshop was held on 02 November 2023 to decide on the theme and focus for GEC Phase 4. A total of 46 people attended, and discussions focused on research questions UKZN academics were interested in exploring, and questions that were submitted by eThekweni Municipality officials around the Durban Climate Change Implementation Plan (DCCIP). The D’RAP Steering Committee reviewed the outputs of the workshop and determined that some of the project ideas put forward were able to fit into other affiliated research programme themes. Those that did not, but held significant value for eThekweni’s DCCIP, were accepted into the new GEC research programme, and were used to advertise for the first round of bursary applications for GEC Phase 4 in December 2023/January 2024. In May 2024 a second round of bursary applications was received for three priority topics that were identified by the steering committee as being important to include for the DCCIP

Further, GEC phase four will include the Durban Educational Partnerships for Innovation in Communities (EPIC) Durban programme, which has been active for more than four years. Budget has been set aside to appoint an EPIC UKZN Coordinator who will be tasked with growing the programme by engaging with multiple academic disciplines; currently only the School of Built Environment and Development Studies is implementing the EPIC model. The idea behind GEC phase four is to expand and cover many topics through either using EPIC approach or through students doing research projects (from masters level to post doc level).

The significant contribution of the research programme is capacity building for post graduate students, with most of the budgeted funds being spent in student bursaries. The programme targets students from historically disadvantaged backgrounds, which is in line with the objectives of the municipality and the National Development Plan (NDP). 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 share in the learning outcomes from the research work. Although core funding is coming from the municipality, UKZN provides co-funding through three South

Africa Research Chair Initiative (SARCHI) chairs. DRAP uses its existence to strengthen research proposals for externally funded research programmes. For example, the Sustainable and Healthy Food System (SHEFS) is about to commence with the second phase which will be pivotal for city's Agro Ecology Unit which is in process of developing food security policy.

For this first year of GEC Phase 4, the programme has managed to attract 5 students (4 masters and 1 PhD), however more students are expected to join the programme. This will certainly broaden the scope of the current phase to include other pressing issues such as understanding heat in Durban, identifying climate sensitive areas within the Durban Metropolitan Open Space System (DMOSS) and a critical review of gaps in mainstreaming climate change in all municipal policies, etc.

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