

Appendix 2: History and organizational arrangements of the partnership

History of the partnership

The research partnership between eThekweni Municipality (EM) and the University of KwaZulu-Natal (UKZN), now known as the Durban Research Action Partnership (D’RAP), dates back to 2004, though it was only formalized in 2011. The partnership was originally known as the EM-UKZN Joint Research Partnership, and was given the new name D’RAP in 2015. A historical timeline which explains the significant steps in the development of the partnership is provided in Table A2.1. Taking time to build relationships is a key lesson learnt in this partnership (Table A2.1), as is the formalization of agreements (Figure 1b). During the process leading up to formalization, an effort was made by both partners to balance the input from both scientists and practitioners and mutually respect each other’s expertise, a further enabling factor identified in the partnership (Figure 1a). This process culminated in the now well-established research partnership which is currently implemented through the KwaZulu-Natal Sandstone Sourveld Research Program (KZNSS). It was formalized through a contractually binding Memorandum of Agreement (MOA), signed between EM and UKZN, which informs the first phase of the program (2011-2014) (Figure 1b). The KwaZulu-Natal Sandstone Sourveld (KZNSS) Research Program is the first research program implemented through D’RAP to explicitly address the science-action gap in Durban. This focused research program on a particularly threatened grassland ecosystem grew out of the need to ensure that the broader D’RAP partnership addressed specific research needs as determined by EM, rather than taking too broad an approach across the whole of the eThekweni Municipal Area.

The objectives of the KZNSS Research Program are to:

- Increase understanding and knowledge of biodiversity, ecosystem functioning and land use changes,
- Assist EM with decision-making for land use planning, management and conservation,
- Address specific climate change challenges,
- Develop monitoring protocols to assess the impacts of climate change, and
- Increase human capital in the above areas.

The partnership was initially core funded by eThekweni Municipality, but has since leveraged additional resources through university researchers having independently accessed external co-funding. As of October 2014, forty-nine people have participated in the programme, from a range of disciplines, and 20 students are currently working on, or have completed, Honors or Masters level studies (Supplementary Box 2). The following academic disciplines are represented: ecology (plant biogeography, plant ecophysiology, terrestrial vertebrate zoology, plant and animal diversity), molecular biology (invertebrate genetics), agricultural economics, geography (remote sensing and GIS), and conservation planning and management. Some disciplines, considered essential to the partnership, such as sociology, political science and development studies, are presently under-represented, but efforts are underway to broaden the representation of such disciplines.

Table A2.1: Summary of significant events and milestones in the development of the Durban Research Action Partnership, indicating alignment with the developmental stages of the transdisciplinary process as illustrated in Figure 2

| Date | Event | Outcome and implications |
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| <i>Stage 0: Prospecting – Lead-in stage</i> | | |
| 2003 to 2005 | Outsourced Training Program University graduates in environmental and biodiversity science placed into a targeted training program to improve their environmental management skills. Training contracted by the Environmental Planning and Climate Protection Department (EPCPD – then known as the Environmental Management Department) of eThekweni Municipality (EM) to the Council for Scientific and Industrial Research (CSIR). | Unsuccessful. The program was expensive, and only one out of five candidates was suitable for employment due to lack of specialist biodiversity skills. Recognition of the need for a different way to build capacity and need to find a new knowledge partner. |
| 2006 to 2008 | 1 st EM-UKZN Internship Program MSc students from the University of KwaZulu-Natal (UKZN) co-supervised by staff from EPCPD and academics from UKZN in research projects to provide them with the specialist biodiversity skills needed by the EPCPD. | Successful, but resource-expensive. Despite both candidates being suitable for employment by the EPCPD, the time investment required for co-supervision by EPCPD staff was extensive and difficult to sustain. Recognition by EPCPD that UKZN seemed like the right knowledge and training partner. |
| Early 2008 | Refresher course in biodiversity and conservation: capacity training (UKZN to EPCPD on a consulting basis) UKZN researchers appointed to provide scientific, short-term, training to ecologists at EPCPD to update them on current ecological theory relevant to their work. | Successful. Relationships were built not only between the primary leaders but also between leaders and other staff members of the two institutions. Trust- and confidence-building for delivery and relevance of academia for practice. |
| 2008 | Support from university researchers to develop EPCPD's strategic plan (UKZN to EPCPD on a consulting basis): UKZN researchers appointed to provide scientific input into the EPCPD strategic plan and ensure alignment with current environmental research trends. | Successful. Relationships built during the ecological training earlier in the year further developed and trust built. Increasing ecological knowledge and confidence of EPCPD lowered power gradients. Further trust- and confidence-building for delivery and relevance of academia for practice. |
| <i>Stage A: Exploring</i> | | |
| 2010 | Negotiations towards a Memorandum of Understanding (MOU) for the Durban Research Action Partnership: Included formal institutional and legal processes as well as content development of the formal, binding contract used to inform the work of the partnership. | Successful. Participants from both institutions were involved in developing the MOU for the Durban Research Action Partnership. This further built relationships and trust. |

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| 2011 | Support and insights from EPCPD practitioners (on an informal basis) for UKZN applications for large research funding grants (e.g. South African Research Chair Initiative and Centre of Excellence for Applied Centre for Climate and Earth Systems Science). | Successful. The partnership provided a foundation for generating the applications. It had highlighted collective EM-UKZN capacity in the research area which the grants focused on and had aligned academic thinking with applied outcomes as required by the grants. The process developed an understanding in both teams for the benefits of the partnership for both parties. |
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| 2011 to 2013 | 2 nd EM-UKZN Internship Program A second phase of the UKZN-EPCPD internship program was launched in 2011 which was to be embedded in the newly formed KZNSS Research Program (see below). | Questionable outcome due to difficulty in finding a suitable biology candidate and the insufficient capacity for supervision. The risk posed by not identifying suitable candidates made it not worth the high resource investment, particularly when compared to the resource-efficient KZNSS Research Program. |
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Stage B: Consolidating – started during this next period of the partnership

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| 2011 to 2014 | Durban Research Action Partnership: <i>Phase 1</i> The first phase of the research program was initiated in 2011, and was formalised through the signing of a Memorandum of Agreement between UKZN and the EPCPD. The EPCPD would provide research funding, and researchers at UKZN would conduct scientific research based on research questions jointly developed by the EPCPD and UKZN to provide research input for biodiversity conservation and management in the face of global climate change. A more specific focus was then developed to address the conservation and management of the KwaZulu-Natal Sandstone Sourveld (KZNSS) grassland ecosystem in eThekweni Municipality. The KZN SS Research Program became the first focused research program for the implementation of the broader partnership. | Mostly successful, necessary improvements identified through evaluation and reflection. Building relationships and trust and laying a foundation for future collaboration was a key part of this stage, as was developing further leadership at different levels i.e. secondary leadership. Baseline biodiversity, ecosystem functioning and land use change knowledge of the KZNSS generated, approximately 10 students have graduated with the relevant skills, and a successful collaborative research partnership i.e. a ‘boundary organisation’, has been established. However, research needs to become more focused on EM’s needs in Phase 2, building on the foundations. The research partnership was deemed a better investment of time and financial resources than the internship. |
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| 2015 | New name for the partnership, along with a logo: The Durban Research Action Partnership (D’RAP). | Successful. The new name of the partnership and logo symbolised consolidation of the group’s shared identity and explicit recognition of bridging the research-action (or science-action) gap (Figure A2.1 B). |
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Stage C: Integrating

Re-start Stage A: Exploring for new disciplines and research themes

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| 2014 to 2017 | Durban Research Action Partnership: <i>Phase 2</i> Based on the successes of the first phase, it was proposed that the research partnership be extended by another 3-year funding phase to continue implementation of the KZN SS Research Program. Funding allocation by eThekweni Municipality runs in 3-year cycles, and approval for Phase 2 is pending. | To be determined. A solid foundation has been built for the collaboration. Integration of data across disciplines and into practice need to be prioritised, along with addressing significant research gaps e.g. socio-economic and governance research, more focused climate change research. |
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Organizational arrangements of the KZNSS Research Program

The Durban Research Action Partnership was officially started in May 2011 with the signing of a Memorandum of Agreement (MOA) between eThekweni Municipality, more specifically the Environmental Planning and Climate Protection Department (EPCPD) and the University of KwaZulu-Natal (UKZN), through the College of Agriculture, Engineering and Science. According to the MOA, the joint research partnership in the area of biodiversity conservation and management in the face of global change would have two components: Firstly, the EThekweni Municipality-University of KwaZulu-Natal MSc Research Internship would continue (see Table A1.1), and secondly, a joint interdisciplinary research partnership between the Municipality and the university would be initiated. Within a few months of the formal umbrella partnership starting, it was agreed that a more focused research area was needed. This resulted in the development of the KwaZulu-Natal Sandstone Sourveld Research Program, which became the first focused research program implemented through the partnership. The Municipality provided seed funding and research direction for the partnership, in line with the EPCPD's vision and mission, and the university provided research input in the form of supervised student projects. The specific research questions were to be jointly identified, and would be implemented through the KZNSS Research Program. By having students conduct the research under supervision (rather than researchers themselves doing the research), the additional goal of building local human capacity in biodiversity, environmental management and climate change adaptation would also be reached.

This MOA was valid for a period of 3 years (July 2011-June 2014), and is currently under review for an extension into Phase 2 of the program. Over the first three years of the program, approximately 50 people have been involved, with a larger proportion of university staff and students compared to Municipality staff (Table A4.1). The program was run through a steering committee, representing leadership from both the Municipality and the university. The steering committee met regularly to discuss progress on the research, and principal investigators (PIs) and students were invited to present progress on their research to the steering committee bi-annually to receive feedback and suggestions and to ensure alignment of research projects with the overall program goals. PIs were expected to submit written progress reports on their research bi-annually and these were assessed by the steering committee. Smaller working group meetings were scheduled on an ad-hoc basis to discuss specific aspects of the program, for example development of a research framework, data management and monitoring, evaluating the partnership, and publishing outputs. Site visits were also arranged for UKZN staff and students to get to know the KZNSS grasslands within eThekweni Municipality, and for Municipality staff to share their knowledge and insight around management and conservation of the key KZNSS sites (Figure A2.1 A). These site visits were also an important opportunity for participants from the university and the Municipality to get to know each other in a slightly less formal setting.

Table A2.2: Participants in the KZNSS Research Program:

| Participants and institutions | How many? |
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| EThekweni Municipality: Managers and/or scientists | 6 |
| University of KwaZulu-Natal: Researchers | 17 |
| University of KwaZulu-Natal: Students (MSc) | 10 |
| University of KwaZulu-Natal: Students (Honors) | 9 |
| University of KwaZulu-Natal: Externally funded students doing KZNSS-related research | 6 |
| University of KwaZulu-Natal: Administrative Assistant | 1 |
| Total number of participants | 49 |



Figure A2.1: A: Site visit to KZNSS grasslands near Cato Ridge, on the western edge of the eThekweni Municipal Area. B: Logo of the Durban Research Action Partnership (D'RAP).