Embedded researchers bridge research and decision-making to build the climate resilience of southern African cities

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FUTURE RESILIENCE FOR AFRICAN CITIES AND LANDS

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The Future Resilience for African Cities and Lands (FRACTAL) project aims to address the challenge of providing accessible, timely, applicable and defensible climate information that is needed by decision makers operating at the city-region scale in southern Africa. FRACTAL has been running since June 2015. It is part of the Future Climate for Africa (FCFA) multi-consortia programme. FCFA's major objective is to generate fundamentally new climate science focused on Africa, and to ensure that this science has an impact on human development across the continent. FCFA is funded by the Department for International Development (DFID) and the Natural Environment Research Council (NERC).

These knowledge products have been developed to share findings from the research in the hope of fostering dialogue and eliciting feedback to strengthen the research. The opinions expressed are therefore those of the author(s) and are not necessarily shared by DFID, NERC or other programme partners.

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Introduction

There remains a gulf between scientific knowledge and the development and implementation of policies and actions in many fields, not least of all in dealing with complex and 'wicked' problems, such as sustainability, urbanization and climate change adaptation (Moser and Dilling, 2011; Lang et al., 2012; Vogel et al, 2016). Transdisciplinary approaches are being developed and promoted to bridge the gap between science and action, going beyond integration between disciplines to making research a more inclusive social process of resolving problems, involving the participation and mutual learning of stakeholders in various sectors (Klein, 2013; Polk, 2015).

Future Resilience for African CiTies and Lands (FRACTAL) uses an experimental 'Embedded Researcher' approach as one of the means to facilitating the transdisciplinary co-production of climate information with researchers and city decision-makers. This briefing note introduces the embedded researcher approach; briefly describes the operational model deployed in FRACTAL; and surfaces key findings to-date from implementing the approach.

Embedded researcher approach in FRACTAL

Southern African cities face high levels of climate vulnerability as a result of biophysical factors interacting with a complex set of social, economic and political factors. There is a need to build climate resilience into the development agendas of these cities. To do so requires accessible, defensible and actionable climate information at the city-regional scale specific to the context of southern Africa. Generating such information in turn requires bringing together scientists and decision-makers. As one of the modalities for doing so, the FRACTAL project facilitated the placement of seven early career researchers in the role of embedded researchers within six of the partner-municipalities, namely Lusaka (Zambia), Windhoek (Namibia), Maputo (Mozambique), Durban and Cape Town (South Africa), and Harare (Zimbabwe).

Each embedded researcher is employed by a local university and is deployed to work within the local municipality. They are directly supervised/managed by two FRACTAL Principal Investigators (one at the local university and one at the local municipality), who are also FRACTAL project team members.

The objectives of the FRACTAL embedded researchers are to facilitate and contribute:

- to co-exploring existing knowledge and co-producing new knowledge on urban climate sensitivities and processes of building climate resilience in southern African cities between scientists and decision-makers;
- to advancing the integration of contextual climate information by creating and sustaining learning forums and mechanisms, with the long term goal of shifting the way urban development, resource management and infrastructure investment decisions are made in southern African cities;
- to strengthening urban governance networks across different sectors, within and between southern African cities, and building a culture of learning within these networks;
- to sharing lessons about adapting to a variable and changing climate across southern African cities in and beyond the FRACTAL network.

The activities of the embedded researchers include:

- acting as link between university and municipal partners;
- mapping relevant stakeholders and knowledge-holders and building and

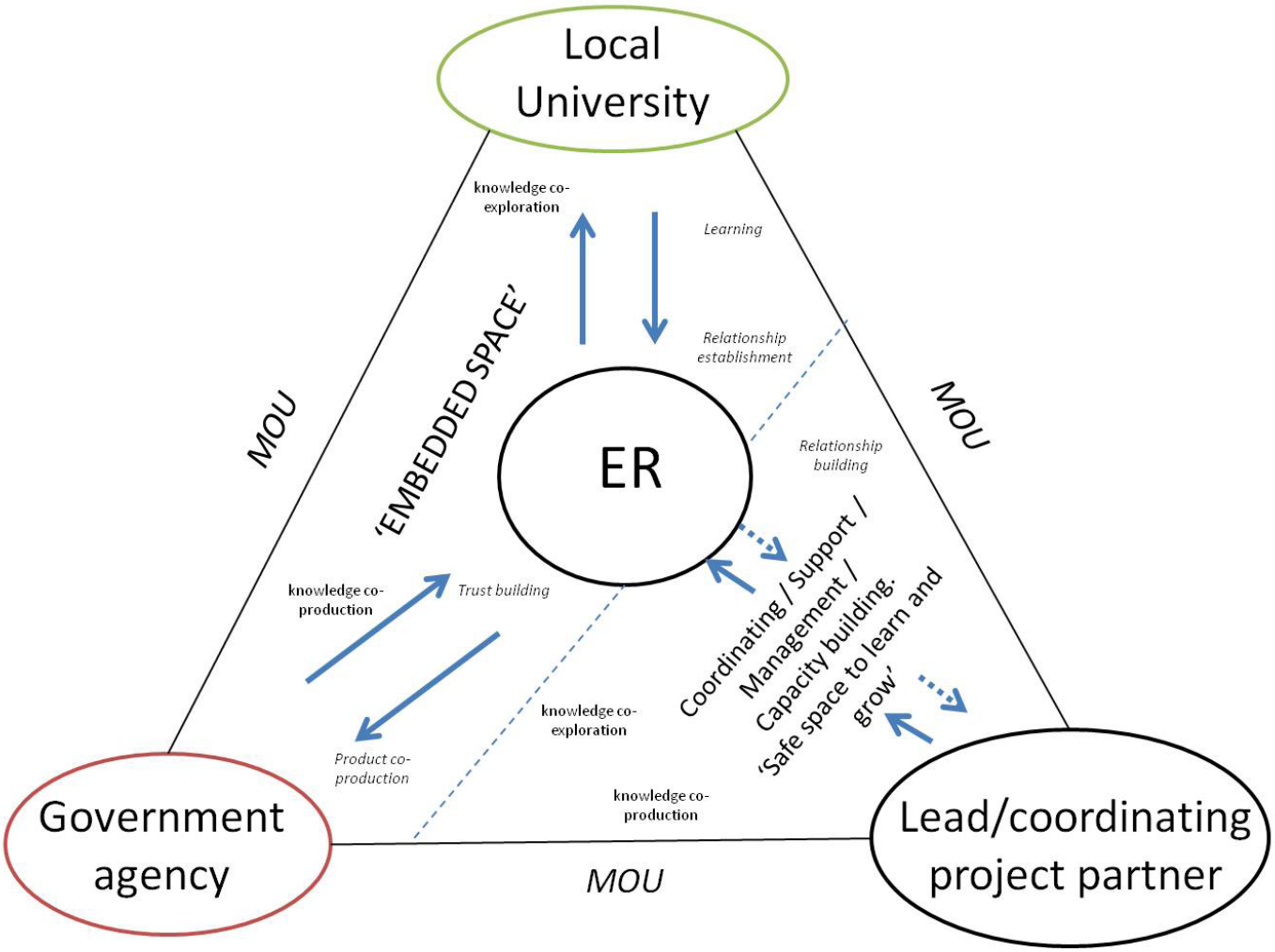
maintaining relationships with them;
- investigating entry points of climate information into policy-making;
- organising and documenting FRACTAL Learning Labs;
- conducting interviews, site- and exchange visits;
- facilitate interactions and communication between the decision makers, practitioners, the climate scientists and other researchers;
- reporting FRACTAL activities to City officials, university colleagues and other partners;
- conducting research into decision-making processes; and
- documenting learning.

These objectives and activities cannot be achieved by the embedded researchers alone. Strong support and commitment is required from all supervisors, colleagues, coordinators, partner organisations and stakeholders involved.

Operational model

The embedded researchers operate within a negotiated space between the local university, local government, and the FRACTAL project lead partner (Figure 1). This space is governed by formal agreements between the three institutions. Within the 'embedded space' the early career researchers carry out their work, which involves extensive trust and relationship building, and facilitating co-exploration and co-production of knowledge

Figure 1: Operational model of the trilateral partnership creating the space within which the ERs function



between government and university departments and levels in the organizational hierarchies.

The embedded researchers are supported in their engagements in the embedded space through being connected, via the lead FRACTAL partner, with a network of embedded researchers and various project teams or clusters in other cities. This trilateral partnership is key to the success of the FRACTAL embedded researcher approach, because the two city-based Principal Investigators ensure the contextual and conceptual relevance of the embedded researchers' work; while the coordinating partner - through an employed embedded researcher coordinator - provides structure, guidance, support and learning opportunities relating to the embedded researcher approach and the broader themes of the FRACTAL project. Although the embedded researcher approach can be implemented through a bilateral partnership, it has become clear that the trilateral arrangement, as well as having more than one embedded researcher to support and learn from/with each other, enhances the efficacy of the approach.

Findings

Aligning city contexts with individual expertise

Within the operational approach, the various cities – with their unique contexts and institutional arrangements – had flexibility in defining the specific roles, responsibilities and organisational positioning of each embedded researcher. These were negotiated and re-negotiated on a case by case basis between the university and city government in each city, together with the FRACTAL lead partner throughout the project. The embedded researchers are drawn from a variety of professional and disciplinary backgrounds – their success depends as much on the willingness of the ER to work across boundaries, be proactive and open to learning, as it does on a specific list of experiential requirements and professional qualifications.

Successes and challenges

The main benefit of the approach thus far has been the availability of an intermediary person who facilitates opportunities to connect a diversity of people, projects, information and knowledge across organisations, cities, sectors and scales. There are challenges, however, associated with the embedded researchers getting embedded in two very different organisations, balancing diverse demands, adhering to different reporting requirements, coming to terms with new technical content, and dealing with continuously changing institutional capacities.

Conclusion

The FRACTAL project is still in progress; however, it is evident from feedback obtained thus far that the embedded researcher approach offers a valuable contribution to bridging the gap between scientific information and the formulation and implementation of policy. The approach has been shown to build relationships and trust between researchers and local authorities, improve receptivity towards the uptake of climate information, and build capacity among early career researchers to undertake transdisciplinary work that builds the social responsiveness of universities. We argue that this is a critical component of enabling transformative climate action in cities, because it serves to bridge communities who all have a stake in dealing with climate change despite having different mandates, knowledge, values, expertise and resources.

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Note

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