

A Complex Transdisciplinary Exploration of South African Climate Mitigation Policy

Doctoral thesis abstract: Emily Tyler, February 2019

The research journey reflected in this thesis emerged from fifteen years of practice of (predominantly South African) climate mitigation policy from 2001 – 2016; from dissatisfaction with the pace and depth of progress, and a realisation that the South African climate mitigation policy community of practice approaches what we do in a particular way. Guided by a complex transdisciplinary methodology, in this thesis I explore this realm of ‘approach’, asking whether it is consequential for the decarbonisation policy agenda in South Africa, and considering complexity thinking as an alternative.

A four-part research question acts as the central attractor to this exploration:

1. *What is the current dominant approach to South African (SA) climate mitigation (CM) policy?*

The thesis starts by articulating the ‘dominant approach’ of the SA CM community of practice (CoP) observed during the research and building on my experience in the field. I reveal this approach as being influenced by the perspective of the international climate mitigation policy process, and the ‘hegemonic worldview’ – using Capra’s (1974) term as a heuristic to convey the set of assumptions and beliefs dominant in the cultural values and form of scientific knowledge that holds power. A normative undercurrent and an environmental perspective that discounts the social realm further shape the dominant approach, an approach that has particular implications for how the SA CM CoP engages with its key policy concepts of transformative change and development.

2. *What does the dominant approach illuminate and what does it obscure about the policy issue?*

I find in the thesis that the dominant approach illuminates aspects of the climate mitigation policy issue: the greenhouse gas constraint; its macro and sectoral scale and temporal implications; technology and finance mitigation options; how various policy instruments work; with a focus on data. However the dominant approach also actively obscures other aspects: the implications of the complex, systemic and long-term aspects of the SA CM policy issue for policymaking; how policy implementation happens; the roles of power, values, culture and behaviour in transformative change; and how to engage perspectives and contestation.

3. *How can a complexity approach contribute towards revealing SA CM policy more fully?*

The thesis then turns to complexity and complex systems thinking to explore how a view from complexity opens up these important but currently obscured spaces for climate mitigation

policymaking. The SA CM policy issue is described in terms of complex systems, and a complexity view is offered of: the relationship between the SA CM policy issue and policymaking, the 'mitigation-development complex', power patterns relevant to SA CM policy, the SA CM policy objectives, and deliberate transformative change. Building on this view, complex SA CM policymaking is described as a journey, reflecting a shift in focus away from content, plans and evidence towards principles, process and emergent strategies; a re-ordering of policy priorities and leverage points, all premised on the complexity observation that top-down control of a complex social system is impossible. A set of policymaking initiatives arising from this complexity approach is offered, including the establishment of a permanent stakeholder engagement platform, a sense-making function, a dedicated strategic and political policy capacity, and a complexification of CM policy instruments and research practice.

4. What is the usefulness of this inquiry to the SA CM Community of Practice (CoP)?

Finally, the usefulness of the inquiry to the SA CM CoP is assessed. I conclude that 'approach' is consequential to our work, and that reflecting on our approach can reveal how it might be constraining us and support our explicit consideration of alternatives. The complexity exploration is useful in two ways. First, it offers the set of practical initiatives referred to above for the SA CM CoP's consideration as SA CM policy is advanced. Second, it offers an alternative underpinning for approaching SA CM policymaking based on rigorous science, aligned with both the complex, systemic nature of the SA CM policy issue and with the increasing complexification and pace of change of the twenty first century. Whilst the gap between the hegemonic worldview and its organisational and physical manifestations and those of a complexity approach is significant – perhaps sufficiently so as to undermine the immediate usefulness of this aspect of the research to most members of the SA CM CoP – a complexity view of transformation as non-linear and episodic proves encouraging.

The research journey traverses the territories of practice and academia, the specifics of South Africa and the breadth of global environmental and societal change, disciplines, perspectives, paradigms and worldviews. Essentially, the research comprises a heuristic move which calls attention to the relevance of policy approach in increasing the pace and depth of climate mitigation action in a development context. As required by a transdisciplinary inquiry this contribution - which lies in the realm of knowledge - has both the societal usefulness described above and academic relevance. In the academic realm the thesis opens a new, multi-disciplinary research agenda around 'approach' at the intersection of climate mitigation, energy, public policy and development studies. By scoping out a complexity interpretation of the mitigation policy issue in a development context, the research contributes to both the climate mitigation and complexity fields, and to thinking on issues of sustainable development. Finally, the thesis provides a rare example of transdisciplinary research and method in climate mitigation and energy studies. It is my hope that these transdisciplinary and reflexivity inroads will some day become paths well trodden.