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Navigating interests, navigating knowledge: Towards an inclusive set-back delineation along Cape Town's coastline

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ABSTRACT

A map is not a product, the temporary representation of reality, but rather the most visible component at the surface of an ongoing and often contested mapping process. This significant epistemological recognition directs our attention towards the linkages between 'mapped space', 'everyday space', and 'spaces of knowledge building and decision-making'. Applying an organizational ethnography and critical cartography, this paper argues that a shift in the production and circulation of spatial knowledge concerning coastal set-back lines occurred in Cape Town. It describes the shift, interrogates how it came about, and what the implications are.

As a governance instrument to promote risk-averse decision-making concerning dynamic coastal ecosystems and coastal infrastructure exposed to storm surges and sea-level rise, the set-back line discursively and materially re-shapes people's realities. But its delineation and the linked multi-actor discussions led by the City of Cape Town's Coastal Management Unit (CMU) also emerge from a specific context. Caught in a constant balancing act between varying interests, sources of knowledge and epistemologies on map-making, the CMU engaged in strategic negotiations and counter-mapping. Effectively acting as 'champions', or 'bureaucratic activists', local government officials enabled the transition towards a reflexive, iterative and inclusive delineation process, departing from a technical knowledge building model according to which coastal engineers and consultants still dominate the intellectual space regarding coastal risk governance in South Africa.

1. Introduction

The establishment of coastal set-back lines is a legal requirement for South African coastal municipalities since adopting the Integrated Coastal Management Act (ICMA) (Act 36 of 2014).[2] These set-back lines aim to regulate the building and development of infrastructure, ultimately preserving coastal ecosystems from human impact, as well as protecting residents from risks posed by coastal processes, such as migrating dune systems and erosion caused by meandering estuary mouths. Set-back lines also aim to protect residents from sea level rise and storm surge events, expected to increase in intensity with a changing climate (Department of Environment and Tourism (DEAT), 2008; Theron et al., 2010). Defining a set-back line to promote risk averse decision-making is thus a socio-institutional governance instrument to manage coastal risk and vulnerabilities, as opposed to hard engineering responses such as sea walls and rock revetments (Cartwright, 2008).

Contrasting the process and outcome of the set-back line delineation methodology implemented by the City of Cape Town Local Government Municipality (CCT) and Overberg District Municipality, Colenbrander and Sowman (2015) made a strong case for the delineation of a set-back to take more than biophysical informants on board. In Overberg, the set-back could not be

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[2] The ICMA was amended on the 1st May 2015. Since this amendment set-back lines are referred to as management lines.

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implemented due to residents contestating the method which did not include socio-economic dimensions. In Cape Town, an inclusive multi-disciplinary knowledge building process enabled the acceptance of the set-back line by a variety of actors. It was thus formalized[3] giving it more potential of reaching its objective of promoting sustainable coastal development.[4] Paradoxically, this paper builds on the Colenbrander and Sowman (2015) analysis by taking a 'step back', focusing not primarily on the delineation process and its outcome, but rather on the dynamic context within which such a process could emerge. Indeed, the need for an inclusive delineation process is questioned when the prevalent discourses on knowledge building fail to provide such a delineation methodology in the first place? Focusing on the role played by the Coastal Management Unit (CMU), nested within the Environmental Resource Management Department (ERMD) of the CCT, this research argues that a shift in the production and circulation of spatial knowledge occurred around the process of delineating the set-back line in Cape Town. The central question this paper sets out to answer is thus: what did the shift consist of, how did it come about, and in particular, which critical role did key actors and mapping play in the process?

The issue is of interest beyond CCT boundaries. In South Africa, the delineation of spatial boundaries has played an important and often contentious role in urban governance for decades. The socio-spatial planning legacy of the Apartheid Group Areas Act (Act 41 of 1950) still remains. A strong spatial perspective is also prevalent in today's strategic urban planning (Baud, Scott, Pfeffer, Sydenstricker-Neto, & Denis, 2014; Lemanski, 2007; Watson, 2003; Sim, Sutherland, & Scott, 2015). Moreover, the issue fits within a broader debate on the shift towards governance and its implications for knowledge management. It has been critically argued that 'more governance' goes hand in hand with a move from "bureaucratic administrative decision-making" to "knowledge-based, strategic decision-making processes", in which key actors or 'champions' play a decisive role (Baud, Pfeffer, Sydenstricker, & Scott, 2011: 4). However it remains uncertain to which extent this shift occurs, and how it unfolds, in cities of the Global South. Similarly, there is little understanding of what 'acting as champion' precisely entails.

In the following sections, this research highlights the importance of environmental discourses and associated knowledge building processes, including mapping, in governance outcomes. An organizational ethnography and an analytical framework distinguishing between five key elements are then explained as the method and a heuristic device respectively. Findings are presented following the five elements, before drawing conclusions.

2. Environmental governance and associated knowledge building processes

Increasingly shaped by the interactions between a multitude of actors rather than by government institutions alone, governance encompasses the structures and processes through which societies share power and influence actions (Lebel et al., 2006). As concepts such as 'sustainable development' are not imposed top-down but negotiated between actors, governance is thus tightly linked to discursive debates, in which concepts are "continuously contested in a struggle about their meaning, interpretation and implementation" (Hajer, 1995: 176).

Many discourses, or "joint understandings of the world", include a specific conceptualization of knowledge building (Hajer, 1995). Gibbons, Limoges, Nowotny, and Al (1994) differentiate between mode I and mode II conceptualizations. Mode I relies on scientific and expert knowledge to attain new insights. The process is most often followed within rigid bureaucratic systems, and relies heavily on Information and Communication Technologies (ICT) and Geographical Information Systems (GIS) (Georgiadou & Stoter, 2010). Mode II knowledge production, instead of being situated in technical scientific institutions, emerges via increasingly heterogeneous practices, principles and locations (Hessels & Lente, 2008: 240). Here, knowledge production is conceptualized as a non −linear "relational process [between a variety of actors], where power, internal capacity and competency issues and external competition may hinder straightforward knowledge exchanges" (Baud et al., 2014: 503, citing Giezen, 2012; Healey, 2007; Gibbons et al., 1994; McFarlane, 2011; Peyroux, Scott, Baud, & Jameson, 2014; Sørensen & Torfing, 2012).

The predominance of certain discourses may thus weaken or strengthen governance efforts towards achieving particular outcomes − also because a predominant discourse may define how and what types of knowledge are used to shape decisions (Colenbrander & Sowman, 2015; Peyroux et al., 2014). Different actors value (and contribute) different types of knowledge (tacit, community, expert or scientific − Hordijk & Baud, 2006; Van Ewijk & Baud, 2009; Pfeffer, Baud, Denis, Scott, & Sydenstricker-Neto, 2013). A central assumption is that more holistic understandings of problems, and their solutions, can be attained by drawing on the various ways actors perceive and experience issues and their reality, i.e. in shaping decision-making as mode II *inclusive* deliberation. A more holistic assessment of needs can produce more targeted urban planning and management (Baud et al., 2011; Martinez, 2009).

This is especially true in the field of risk governance, where government and the larger public often have different risk perceptions, needs and priorities (Cannon & Müller-Mahn, 2010). In the coastal space, risk is a complex dynamic phenomenon, and competing interests arise: coastal ecosystems serve as buffer zones, but the coast also provides economic opportunities. Defining the boundaries between development and ecological buffers is a contested process, especially considering that the lucrativeness of commercial ventures returns tends to increases with proximity to the coast (Colenbrander & Sowman, 2015). Thus, final decisions such as delineating a set-back as a line of a map, can only be enforced to reach their set objectives if the decision-making process is perceived as inclusive and legitimate (Oelofse, Scott, Oelofse, & Houghton, 2006). Second, the pursued goal must also be perceived as just, i.e. those that will be impacted by a decision must agree that the trade-off between interrelated environmental, social and economic interests is in their (long-term) advantage (Colenbrander & Sowman, 2015).

2.1. Knowledge production and (critical) cartography

Discourses promoting mode I knowledge production frame ICT and GIS as technical tools embedded in an absolute physical, or Euclidian, understanding of space, asking and answering descriptive questions only (Harris, Weiner, Warner, & Levin, 1995; Gatrell, 1991; Pickles, 1995). In that light, the growth of GIS may be viewed as the rehabilitation of the positivist epistemology (Pickles, 1995); 'speculation' is avoided through 'formal logic' and 'objectivity' (Kitchen & Tate, 2000). Criticizing a mode I conventional

[3] The set-back line was formalized as the City's Coastal Urban Edge within the Spatial Development Framework in 2013. It remains a draft set-back in terms of the Integrated Coastal Management Act.

[4] In this context, sustainable coastal development is defined as the need to avoid the 'development-risk-protection' cycle (Cooper & McKenna, 2008). Defending coastal property from the threats of sea-level rise and coastal processes locks society into a perpetual cycle of increasing costs expenses from maintaining sea defences, pressure on the local economy, loss of beach and consequential social impacts (Colenbrander & Sowman, 2015).

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