



Institutions put to the test: Community-based water management in Namibia during a drought



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ABSTRACT

In Namibia, rural water governance has changed profoundly during the last two decades. Today, in many rural communities, user associations administer water and set the rules for management practices. Their rules typically define boundaries and specify contributions that vary for members and outsiders. When the rains failed in 2012–14, the mobility of people and herds increased and put the newly formed institutional regimes to a critical test. Based on long-term ethnographic fieldwork in seven communities, we examine whether and how management regimes were either altered or applied. The results indicate that cultural models of kinship and reciprocity took priority over formal agreements during the drought. Non-adherence to formalized practices and to rules of excluding outsiders also expresses a certain resistance to the interpretation of water as an economic good.

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1. Introduction

Much research on African pastoralists focuses on pasture management and the organization of grazing (Bollig et al., 2013; Dyson-Hudson and Dyson-Hudson, 1980; Fratkin, 1997; Galvin, 2009). This research highlights a relatively weak coupling between livestock density and the availability and quality of grazing in arid and semi-arid rangelands. Both are shaped by the variation in precipitation and occasional veld fires that create a highly uneven distribution of resources across space and time (Behnke et al., 1993; Homewood, 2008; McCabe, 2004; Schnegg et al., 2013; Vetter, 2005).

Mobility is the key livelihood strategy to mitigate the risks attached to these highly stochastic system dynamics. As long as land is held communally and pastoral mobility is not restricted by political boundaries, private property arrangements or other measures of exclusion, herders can cope with the patchiness of resource distribution efficiently. Flexible access controlled via cultural means (e.g., kinship obligations, traditional authorities and neighbourhood councils) creates relatively resilient social-ecological systems (Bollig, 2006; Bollig et al., 2013; Lesorogol, 2005; McCabe, 2004).

While the organization of grazing has been studied in some detail, institutions of water management are not understood as well (but see Helland, 1997). Until some 50 years ago most African pastoralists obtained water through natural springs, surface water, and hand dug wells (Bollig, 2013; McCabe, 2004; Robinson, 2009). Open water sources were usually managed with adjoining pastures. These conditions changed significantly in the middle of the 20th century under the influence of the colonial state and its ‘modernization’ paradigm. In northwestern Namibia, as in many other parts of Africa, hundreds of boreholes were drilled to make available pastures that were only rarely used (Bollig, 2013; Gomes, 2006). After independence and inspired by the idea of Community-Based Natural Resource Management (CBNRM), the Namibian state handed the responsibility of these boreholes over to local user associations. From then on, communities had to cover the costs of water and the administrative responsibility for its distribution.

This glimpse into African pastoral livelihoods reveals that water and land rights are coupled and create multiple boundaries. While water rights were relatively unimportant and subordinate to land rights in the pre-colonial and colonial past, they became more salient in recent decades. Through the economization of water and the introduction of user associations, sharing water now forms relatively narrow boundaries around the well. At the same time, sharing of both water and land are embedded in sharing ancestries,

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risks and experiences at the larger societal scale.

To analyse overlapping sets of rights and boundaries, Sally Moore has introduced the concept of *semi-autonomous fields*. She defines these as social settings including actors who can generate rules and coerce compliance to them (Moore, 1973). Social fields are semi-autonomous, because they are connected to one another and embedded within the larger legal and political organization of society. For Namibian pastoralists, water, land and kinship form three social fields, regulated by their respective normative orders and connected to one another. For resource governance, Frances Cleaver and others have argued analogically that people have multiple social identities that go beyond their economic and productive roles (Cleaver, 2012; Cleaver and de Koning, 2015; Hall et al., 2014; Meinzen-Dick, 2007). As we have demonstrated elsewhere, institutions of water management hardly have just one purpose alone and people's interactions involve multiple roles. This multiplicity of sharing restricts the agency of actors. At the same time, it opens other forms of access (Schnegg and Linke, 2015).

Sharing resources like water, land and ancestries creates bounded groups. While both models (Moore and Cleaver) put the overlap of social fields and the embeddedness of institutions centre stage, they do not explain when one set of rules and thus one set of boundaries becomes salient. Here, theoretical ideas developed at the intersection of social anthropology and new institutional economics can be helpful. The concepts of bargaining power and relative prices are particularly useful (Chabwela and Haller, 2010; Ensminger, 1992; Ensminger and Knight, 1997; Haller, 2013; Haller et al., 2013; Knight, 1992). A relative price describes the value of a commodity in terms of other goods or services. As we see below, during drought, unbounded access to land gains in value. Wealthy herd owners are particularly willing to accept higher costs to get access. According to Knight, actors opt for institutional regimes that serve their distributional goals (Knight, 1992). The more bargaining power an actor has, the more likely s/he will be able to establish her or his preferred rules. Thus, the price actors are willing to pay to maintain or blur boundaries with respect to a given resource in combination with their bargaining power for doing so can help to explain why one set of rules and thus one set of boundaries becomes established over others.

During the last two decades, CBNRM policies have helped in crafting new institutions and thus new boundaries of water governance around the wells (Bollig and Menestrey Schwiager, 2014; Falk et al., 2009; Schnegg and Linke, 2015). When the rains failed in northwestern Namibia in 2012–14, these institutions were put to a critical test. During a drought increased mobility and highly individualistic moves of livestock herds represent a challenge to rules governing communal resource use. Increased and erratic mobility may lead to situations in which (1) rules are enforced and continue to coordinate water management, (2) rules are partly applied and partly suspended, (3) one set of rules is replaced by another set of rules, and/or (4) the institutional regime collapses entirely and gives way to open access. But, which of these situations took place in the Namibian case?

Before we can examine in detail how the ecological crisis influenced the institutional dynamics around water and land in Namibia, we delineate the pastoral water management and the ethnographic context of our study. Next, we introduce our methodological and data analytic approach. We then briefly describe the way water was managed before the drought in order to better explain how institutions were challenged during the crisis. We examine the severity of the drought and its impact on livestock mortality and mobility. Against this background of the ecological crisis, we ask how rules of resource tenure were applied and whether and how they changed when challenged.

2. Case study

2.1. Pastoral water management in Namibia

In pre-colonial and early colonial times, the research area experienced intense conflicts among armed local groups over the few reliable water sources. Since the 1920s, the colonial administration controlled such conflicts by appointing 'fixed' chieftains to govern land and embedded perennial water sources (Wallace and Kinahan, 2011). In addition, households that dug or, on rare occasions, paid for the digging of seasonal wells in a river bed, a task involving the investment of significant physical labour, had exclusive rights to the use of these wells. The seasonal wells required relatively little social coordination as costs (digging, day to day management) and benefits (water for a couple of months) were shared in a numerically small social group of closely related people. However, cases of conflict connected to the illicit use of such wells did occur occasionally. They were addressed by the neighbourhood council and occasionally minor fines (e.g., a head of sheep) had to be paid. However, such conflicts were rare and access rights to such temporary water sources were perceived as fairly well defined through kinship and household membership (Gewald, 2011; Werner, 2000).

Access to pastures and water was ensured through the complex ties of a double descent system among the Herero speakers, where access rights were guaranteed to all those related to the 'owner of the land' (*omuni wehi*) patrilineally or tied to him through the matriline. Whereas patrilineal tended to settle in identifiable areas (without any exclusive rights to land), matrilineal were spatially highly dispersed. Hence, geographically far flung genealogical ties were an important means to access resources, to reduce risks and provide multiple options for spatially highly mobile herds. In the late 19th and early 20th centuries several big men established themselves in the region and established an access system that guaranteed use rights in a region also to non-related clients.

This complex picture radically changed in the middle of the 20th century when the South West Africa administration under the jurisdiction of the colonial South African state started drilling hundreds of boreholes on communal lands. The drilling of boreholes needs substantial technological input and is costly. Boreholes are drilled up to 300 m deep and nowadays a drilled borehole costs 15,000 to 30,000 US\$. Between 1960 and 1990 the number of water points in the northern region of Kunene increased almost by a factor of ten and profoundly altered land use (Bollig, 2013:323). Extensive pastures previously only viable during or shortly after the rainy season when seasonal rivers and filled pans were abundant, now became available year round (Bollig, 2013). This 'hydrological revolution' allowed residents to sustain higher stocking numbers and altered mobility patterns significantly. Often, the changes also laid the basis for a more sedentary lifestyle. Major parts of the management of these boreholes were accomplished by the administration of South West Africa under the jurisdiction of the colonial South African state.

As long as the state covered the costs for establishing, running, and maintaining the infrastructure little local coordination was required. Since water was by and large freely available at all boreholes, access remained regulated through land and water rights were firmly embedded within land rights. As the costs of waterholes were not shared locally, institutions regulated access to pastures adjoining boreholes. Access rights (i.e., benefit sharing) were regulated within a chieftaincy and through a somewhat vaguely defined linkage between a household head and a traditional authority. Users were 'under' a chief acknowledged by the administration and respected his rights to regulate access. Newcomers to a grazing area would have to ask the chief for permission

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