

Struggles over access and authority in the governance of new water resources - evidence from Mali and Zambia

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ABSTRACT

Research on water scarcity in the South has often focused on the impacts of limited water resources for the rural poor, prompted most recently by the climate change debate. Less attention has been drawn to the social and institutional processes surrounding the emergence of new collective water resources, and how this affects authority, access rights and social exclusion in local water governance.

The paper addresses this issue through a study of local competition over access to new common-pool water resources in isolated rural areas of Zambia and Mali. In Mali, climate change has led to the sporadic emergence of new natural lakes and ponds in some locations. In Zambia, the development of boreholes has provided access to water resources that were not previously available to local communities.

The paper explores how local actors and organizations have sought to assert control over and rights of access to the new water resources. It shows the ways in which this has furthered both conflict and cooperation between the involved actors, and how new rules of access and associated institutional domains have developed. At the same time, however, it also shows how the struggles over access and authority have tended to marginalize the poorest and other user groups from access to the new water resources, by seeking either to monopolize access rights or developing explicit and implicit mechanisms of exclusion.

The paper concludes by discussing the implications for water policy and research in terms of the way we understand the development of new water resources in the current context of inequality, water scarcity and climate change.

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INTRODUCTION

Research on water scarcity in the South has often focused on the impacts of limited or dwindling water resources for the rural poor, prompted most recently by the climate change debate. Rather less attention has been given to the social and institutional dynamics surrounding the emergence of *new* water resources in the rural South, and how this affects access rights, authority and social exclusion in local water governance.

The paper seeks to address this issue through two complementary case studies of local competition over access to new communally managed water resources in isolated rural areas of Zambia and Mali. In Mali climate change has paradoxically led to the sporadic emergence of new natural ponds and lakes in some areas (Mougin et al. 2009) while in Zambia a programme of borehole development is in progress to address rural water scarcity. In both cases, these developments provide access to water resources that were not previously available to local communities.

Exploring such cases can, firstly, provide us with a greater insight into how local rules and organising practices come to be established around new water resources - whether these are caused by unpredictable effects of climate change, or by planned interventions that seek to address water scarcity through local infrastructure development. Secondly, the emergence of such new resources provide opportunities for examining the nature of broader processes and power relations in local water governance that are otherwise dormant or difficult to examine. Finally, such insights may contribute to more normative and developmental aims, including efforts to address inequality in local water governance. Efforts to address water scarcity and manage the impacts of climate change often have a strong emphasis on equitable water governance and poverty alleviation (whether nominal or real), and it is therefore relevant to explore the dynamics of inequality in relation to access and governance of new water resources.

ANALYTICAL APPROACH

Recent decades have seen an increasing recognition of water resources management as a politicized field, and research has for some time now pointed

to the significance of distributional politics in water governance, including distinctions between absolute and relative water scarcity.

The emergence of a new water resource is thus as much a social event as it is a technical and biophysical one. As such, the rules and organizing practices around new water resources are partly determined by what “already exists” in terms of both the explicit institutional landscape and underlying structures such as power relations. And yet it is problematic, we claim, to assume that the rules and authorities that develop around new water resources are thereby exclusively or automatically determined by the surrounding context:

Firstly, exactly because they are socially embedded, overarching institutions and power relations in water governance will frequently be subject to the particularities of time, space and social agency in a given location, as rules and norms are internalized and made manifest locally (Cleverly 2003). Secondly, the actual institutional landscapes of water resources governance are by no means necessarily all-encompassing or monolithic. This is perhaps particularly so in rural areas such as those examined in this paper, which are frequently subject to situations of legal pluralism and institutional porosity (Lund 2006).

Thirdly and more generally, institutional frameworks do not merely “exist”, but require continuous (re-)production in order to sustain and consolidate their legitimacy and authority – not only by water users, but also by the representatives of particular water governance institutions themselves. Maintaining positions of control in natural resources governance is thus “hard work” and requires ongoing assertion and interaction in real-world situations, including strategic alliances and compromises.

Taken together, these features open opportunities – sometimes small, sometimes more significant – for local actors to manoeuvre in the institutional landscapes of local water governance. In this respect, the ambiguous and negotiated nature of property and access to land in Africa is well described (Berry 1993; Fortmann 1995; Juul and Lund 2002; Moore 1998). This research has provided insight into how powerful persons can influence and demolish state policy and legislation, and how people invest in social relations to attain and maintain access to valued resources.

In other words, the practices that take place around the emergence of a new water source may serve to consolidate broader water governance structures, but they may also serve to “localize” or change them. Having said this, it is important to avoid taking such notions too far into actual voluntarism: As actors engage in struggles over control of and access to local water resources, the economic, social and symbolic assets they are able to employ play a crucial role in determining the outcomes. While some people are in a better position to interpret, define and influence rights over resources, the less privileged lose out in the struggle over access (Peters 2002). Given that assets are rarely equally

distributed, inequality and power comes to play a key role. A balanced approach is thus required, which avoids determinist assumptions but on the other hand recognizes the endurance of structure.

METHODOLOGY

The cases discussed in this paper were studied as part of the wider three-year 'Competing for Water Research Programme', which explored local water conflict and cooperation in Bolivia, Mali, Nicaragua, Vietnam and Zambia⁸. The study included the development of inventories of water conflict and cooperation in the study areas. In Zambia, a total of 58 conflict and cooperation "situations" were mapped and categorized in Namwala District (see Mweemba et al. 2010), while in Mali a total of 58 were identified in Douentza District (see Djiré et al. 2010). The two cases examined here were selected from these inventories along with others for in-depth study. Selection of cases was based on the criteria that they provided a particular rich insight into the issues we wished to explore, e.g. that they were of a certain duration and that they allowed us to explore the actions of the poorest in some detail (for a discussion of such rich or "dense" cases, see Flyvbjerg 2006).

The development of each case was traced over time, charting the actions and interactions of the various actors involved. This was done using standard ethnographic approaches, with an emphasis on stratified semi-structured interviewing and techniques such as timelines to help aid memory. The actions traced included physical actions, speech-actions and "non-actions" (e.g. deliberate withdrawal as an act in itself), with due regard to agency that might divert from the narratives imposed by other actors (or ourselves) on the conflict and cooperation events. Attention was paid to the particular risk of missing out on the "invisible" actions and non-actions of these actors, and interviews were thus kept relatively open and free of the particular timelines established by the researchers or other actors. A balanced approach was sought which on the one hand departed from notions of the poor as passive victims, while on the other hand recognizing the structural limitations they face (de Haahn and Zoomers 2005; Nygren 2009).

The case studies were supported by baseline information on livelihoods, water access and water ownership, provided by a separate questionnaire survey with 200 households in the area. The survey allowed for stratification of results, using a well-being index developed as part of the programme (see Ravnborg et al. 1999 for the methodology applied). Additional supporting information came from the Inventory and other information gathered during the fieldwork carried out under the research programme. For further details on the methodology of the Competing for Water programme, see Ravnborg et al. (2008).

⁸ For more information, see <http://www.diis.dk/water>

In the following we describe and discuss two case studies from two different African contexts. In the Malian case the emergence of the new water resource is an unplanned effect of climate change (see Mougin et al. 2009), whereas in the Zambian case, the emergence of the new collective water resources through borehole construction is a more planned effort. In both cases we analyse the rule-generating processes and institutional dynamics that come into play when new collective water resources become available to local populations. The different settings and circumstances of the two cases leads to different outcomes in some respects, but also show certain similarities in terms of actor behaviour and the way in which semi-autonomous rule-sets develop. So, although different in nature, the cases are complementary and provide insights on the role of cooperation and conflict in the development of water management rules.

UNPLANNED WATER: THE CASE OF LAKE AGOFOU, MALI

The first case study shows how water conflicts are shaped in the institutional changes provided by the 1990s' decentralization reform in Mali. The conflict concerns lake Agoufou, which is situated in the intersection between two neighbouring rural municipalities of *Hombori* and *Gossi* in the north-eastern part of Mali, which is also the intersection between the Mopti and the Tombouctou regions. The lake used to be a temporary pond, but has been permanent since 1991 after a year of heavy rainfall.⁹ The lake is situated in a dry, sandy and arid environment where water is scarce particularly in the dry season, during which water is only available at dispersed wells in the area. In the rainy season, access to ponds is usually free since surface water sources belong to the state and cannot be privatized (Law of République du Mali 2002, 3). When surface waters dry up, pastoralists move to groundwater points, such as wells and boreholes to which access is negotiated and payment in cash or kinds is often required.

The contested claims over Agoufou are stated in a context where the municipalities have emerged as new institutions of public authority and created an opportunity for influential actors to compete for power and influence in local politics.

With the creation of the municipalities in 1999, Lake Agoufou became a source of conflict between the municipalities of Hombori and Gossi as the territorial boundaries between the administrative units were not defined. The territorial boundaries were initially thought to be established as part of the decentralization process. The territorial delimitation, however, was never brought about because the Malian Government was concerned that the delimitation could further land disputes between administrative units (Idelman 2009). Instead the municipal

⁹ According to Leblanc et al., the permanency of lakes and ponds can be explained according to the *Sahelian Hydrological Paradox*, which explains that, even though rainfall is generally decreasing, due to drought-caused loss in vegetation and increased run off, ground water rises, while ponds occur in low-lying areas (l'Hote et al. 2003; Leblanc et al. 2008).

boundaries were later redefined as administrative scope, as an attempt to go about the delicate issue of land disputes (Idelman 2009, 10). In the case of Agoufou, the lake is situated on the borders of the municipalities. The presence of the permanent water source which is a scarce resource has become a reason to struggle, because the lake provides water and opportunities to develop other resources and activities such as fishery, watering of crops, watering of animals, and vegetable gardens on the lake shores and planting of *bourgou* pastures¹⁰ and local trade. Furthermore, the newly elected mayors both wanted to obtain the tax revenues from the new productive activities provided by the lake.

Before 1991, Agoufou was merely a temporary pond which constituted a strategic point for migrating pastoralists, who would settle for a couple of month in order for the cattle to regain strength. Now, the permanent presence of the lake and pastures of Agoufou has attracted people from a number of other locations. But while water is abundant and can serve everybody, grazing and fodder resources are limited. In the Sahel, water and pastures are interrelated and access to pastures and grazing lands is often regulated by regulating access to water (Cold-Ravnkilde 2009; Cotula 2006; Thébaud 2000). Consequently, in order to control the pastures, the control over the access to the lake has to be won.

Today, the population that lives more or less permanently in Agoufou consists of around 150 households. However, the area has a complex ethnic composition due to the different periods of settlement during the Sahelian drought in the 1970s and 1980s. In the rainy season, Fulbe herders¹¹ migrate from the inner Niger Delta to graze their animals at Agoufou, but in some years the absence or limited availability of pastures forces the herders to go elsewhere. On a more permanent basis Songhay farmers¹² live in proximity to Fulbe and Kel Tamashek groups¹³. The Kel Tamashek are historically known as nomadic pastoralists, but have along with democratisation adopted a more sedentary livelihood strategy, although herding is still their main activity.

The different livelihood strategies employed in Agoufou often create tensions among the inhabitants because the different livelihood strategies require different and sometimes competing land and water uses. E.g. when the cattle belonging to the pastoralists destroy the vegetable gardens planted by the Songhay. These types of incidents create conflict on an everyday basis between the inhabitants,

¹⁰ The *bourgou* is a water grown fodder plant, which is available in the dry season and one of the most prized resources in the area, see Cotula (2006).

¹¹ Fulbe is a collective term for a large group of people who are culturally, linguistically and politically related. The Fulbe are often referred to as Fulani in the Anglophone literature and as Peuhl in the French literature. The Fulbe are spread all over West Africa mainly in the Sahel and Sudan zone.

¹² Historically the Songhay are sedentary agriculturists

¹³ The Kel Tamashek are of Berber descent and are known as desert nomads. Their political organization is based upon a rigid social hierarchy which is reproduced in almost all Kel Tamashek domains, with some variations.

and cohabitation is a challenge that has only been further complicated by the dispute between the municipalities. Furthermore, many of the residents are former refugees who have settled in the aftermath of the 1990s Kel Tamashek rebellion in Mali¹⁴ and the conflict's repercussions still resonate in the interaction between the groups.

Process description

The conflict over Agoufou began in 1999 after the implementation of the municipalities as new administrative units. Seeking to ensure territorial control over the new lake, the Mayors from Hombori and Gossi began writing letters to each other and to the district, regional and national authorities. In this correspondence they each claimed that the new lake was situated within their particularly municipal territory, and that consequently the land, the population, and the economic revenues from the agricultural and pastoral activities belonged to them¹⁵.

The situation eventually escalated when Mali's Ministry of Decentralization delegated a mission to set up an entrance gate on the national road which marked the entrance to the region of Tombouctou. This apparently mundane action had significant consequences, since it directly implied that Lake Agoufou was situated within the municipality of Gossi (which is situated in the Tombouctou region). When a group of men from the Songhay community in Hombori Municipality were informed of this, they performed a protest march to the gate and destroyed it. While doing so, they referred to a convention agreed upon in colonial times, which stated that Agoufou belongs to Hombori.

After this incidence, the Mayors of the two municipalities, their counsellors and the state representative of the two districts gathered to discuss the issue with the people from Hombori and Gossi. During the meeting public quarrels broke out, and no agreement on the ownership of the lake was found. The construction of the entrance gate, however, was abandoned. During a subsequent meeting between the authorities, the prefect of Douentza proposed to divide the lake in two. This has not been considered feasible by the inhabitants in Agoufou and the question has never been officially resolved.

Eventually, then, the prefects and the ministry of territorial administration did not reach a decision on which municipality controlled the lake. Formally, this deadlock was caused by the lack of a clear delimitation of the territorial boundaries of the new municipalities. It is however also possible that the Malian

¹⁴ The rebellion is one in a series of Kel Tamashek revolts in the colonial and post-colonial history in which the Kel Tamashek claim that successive Malian governments have all largely ignored their interests, both in terms of access to development aid and economic development, and violated their human rights (Seely 2001).

¹⁵ Copies of the various letters are collected as part of the field work material.

Government is reluctant to make a decision in the conflict due to the Kel Tamashek question, which in this post-conflict area still resonates in local politics¹⁶. According to Seely, the decentralisation reform was part of a political solution to the threat to territorial sovereignty and quest for autonomy in the Northern regions (Seely 2001).

Most recently, the Municipality of Gossi appears to be employing a strategy of continuous investment in public infrastructure in the area, such as a vacation park, a public school and an environmental protection programme. But while this approach appears to have increased Gossi's control over the area to some extent, the lake remains disputed territory open to different interpretations of ownership. In this context, some local users have sought to exploit the conflict between the Municipal bureaucracies in an attempt to enhance their own access to and control over the lake.

One such situation took place in Agoufou in 2007. In an attempt to monopolize access to the lake, a group of Kel Tamashek families have planted *bourgou* plots in one side of it¹⁷. When cattle herders arrive with cattle on this side of the lake, the Kel Tamashek insist that they should go elsewhere in order not to damage the *bourgou*. The implication of this is that the Kel Tamashek not only control the land but also the water along this side of the lake.

The Kel Tamashek have adapted a more sedentary livelihood strategy, which is well-suited in a decentralisation era, where attachment to territory is important in order to secure livelihood means. This strategy is applied by the Kel Tamashek who in virtue of being residents in Agoufou have benefitted from various investments in their favour. The Kel Tamashek, among other things, have benefited from a government funded project to support the investment in the planting of the *bourgou* through their strong ties to the Gossi municipality. This investment in the *bourgou* has limited the access of the migrant herders. The *bourgou* project has thus reinforced the position of the Kel Tamashek and strengthened their claim to control access to the lake. So the different strategies the users apply to secure their access and control over the resources also affect who gets included and excluded from the use of land and water.

The Kel Tamashek families of this area are led by a Chief who has multiple interests in the lake: In principle, Kel Tamashek Chiefs serve as local authorities within the formal administrative structure of Gossi Municipality. This, on the one hand, provides him with important contacts in the administrative bureaucracy of Gossi. However, because of the uncertainty over which Municipality controls the lake, the Chief's authority over the area is open to question, and he therefore has a strong interest in asserting his authority through other means. As he is

¹⁶ Violence and banditry by former combatants still continues with varying intensity (Seely 2001, 515)

¹⁷ The Kel Tamashek clan in question originate from the Bourem district in the Gao region (Gallais 1975) and have been refugees during the drought of the 1970s and 1980s.

furthermore a user of the resources in and around the lake with a variety of agro-pastoral and other economic interests, he has a strong interest in asserting his influence over the lake.

Most permanent residents in Agoufou appear to have grudgingly accepted the control of one side of the lake by the Kel Tamashek and their Chief, because they do not wish to create problems with them, but the migrant herders have not. In October 2007 a migrant Fulbe herder from the Delta watered his cattle in the lake, and while doing so transgressed the recently planted *bourgou* plots belonging to the Chiefs. The Chief's immediate response was to threaten the herder with the gendarmes¹⁸. The Fulbe herder, however, continued to lead his livestock to this side of the lake, and the dispute gradually mounted to a point where, one day, the herder drew a gun to enforce his right to water his animals. The Chief duly informed the gendarmes from Gossi, who arrested and fined the herder for carrying a weapon.

The Chief further justified his right to limit the Fulbe's access with the risk of overgrazing and diseases in the migrating herds.

"We have our plots, which we want to exploit, but we don't have the means to buy the fence to close them off. There are always animals that destroy the plots. Our resource is the lake, but we can not use it because there are too many animals grazing around the lake. Sometimes more than 15.000 cattle come in the rainy season. They come with their sick animals, and they eat up all the pastures" (Author's interview 2008).

The Fulbe, on the other hand, claim that they have grazed their animals in Agoufou before the Kel Tamashek settled, and that the Kel Tamashek are denying them access to the lake - an access right they possess in the virtue of being Malian citizens.

"When we first came to Agoufou, no one prevented us from watering our animals, because there was not even a village here. But since four years ago the people in Agoufou have started to show us where we can water our animals. It is the Kel Tamashek chief who shows us where we can go with our animals, but we have refused. They hit us and insult us, but we still require one law (e.g. for all). There is no difference between the place where they want us to go and where they refuse to let us water our animals. What bothers us is that we knew the lake before they were here in Agoufou. They came last. They will go to the mayor in Gossi to make him fine us. But we don't care whether it is Gossi, Hombori or all over Mali, because it is still within the territory of Mali" (Authors interview 2008).

After the incident with the herder, the sub-prefect (state delegate at the municipal level) in Hombori was called upon by the herders' representative to mediate on

¹⁸"Gendarmes" is the name for a military corps with police assignments in rural areas and is similar to the military police but with more direct contact with the citizens.

the behalf of the Fulbe and find a more long-lasting solution for how the migrating herders could access the lake to water their animals. Gossi municipality did not interfere. The sub-prefect indicated a passage corridor for the cattle which did not transgress the *bourgou* plots belonging to the Kel Tamashek. The passage corridor was respected that year; but similar incidents repeated next year, when a new group of Fulbe herders arrived at Agoufou. Four young herders were arrested by the gendarmerie in Gossi.

Struggle over rules and narratives of belonging

The case study shows that struggles over control and access of water resources are at the same time struggles over the scope and constitution of authority (Lund and Sikor 2009). The case also shows how in the struggle between the authorities over the lake different users try to negotiate access to and control over water and pastures. The uncertainty of who has the administrative authority to control the lake makes it possible for the users to influence the rules of use. The way the Kel Tamashek and the Fulbe enter the struggle over resources in order to secure their authority/ livelihood means affects the rules of use i.e. how one actually achieve access to the lake.

Because Agoufou used to be a pastoral site where people did not settle permanently, the ownership of Agoufou is difficult to define in formal legal and administrative terms. Different narratives of belonging have become strategic means applied by the actors involved in the conflict over the valuable territory. On the one hand, references to the past are important because they play upon the logic of tradition and the way things "have always been", as a means of legitimizing claims to unrestricted access rights. On the other hand, the increased competition for resources has meant that new strategies of manifesting access and control are being applied that break with customary practices. One example of this is the way in which belonging to a sedentary community can serve as an instrument for securing access to the valuable resources.

The Fulbe feel entitled to unrestricted access to the lake like they have always had. The Fulbe claim to have come first and refer to tradition and the way things use to be to strengthen their claim. In the citation the herder also make use of another kind of norm that is more related to the nation state when he claims unrestricted access to Agoufou by virtue of his national citizenship and the equal law for all within the territory of Mali. This way he contests the privileged access that sedentary people pretend to have.

At one level, the conflict expresses the logic of the resident vis-à-vis the non-resident herders. The Kel Tamashek who have settled permanently are dependent on the presence of sufficient water and pastures throughout the year and do not wish that migrating herders, who they claim do not participate in the

investment and maintenance of the resources, exploit the limited resources available. But it also shows that more than one register of claims can be called upon to strengthen one's case in the competition over access to water resources.

Contested authority and powers to negotiate

Provided his status as chief, the Kel Tamashek chief represent the administrative authorities at the local level and he can easily call upon the municipal authorities and the gendarmes in Gossi, who support him in throwing out the migrant herders. When the Gossi municipal authorities fine the Fulbe herder, they thereby support the chief in his claim and recognize his position as chief in Agoufou. However, the chief's attempt to limit access to Agoufou is contested by the Fulbe. The Fulbe do not recognize the Kel Tamashek chief as chief in Agoufou. Thereby the Fulbe contest the authority of the Kel Tamashek chief to control and give access to the resource. Because of the territorial dispute between the municipalities it is not settled whether Agoufou administratively belongs to Gossi or Hombori, thus is not solved who is chief in Agoufou. The Fulbe are aware of the dispute between the municipalities and the unsettled question about chieftaincy and calls upon the sub-prefect from Hombori to support their claim to access to the lake.

This way the Fulbe herders benefit from the dispute between the authorities to favour their claims. If the mayor in Gossi had won the dispute, the Fulbe herders would not be able to negotiate access with the interference of Hombori's sub-prefect. But in contrast to what we shall see in the Zambian case below, the Fulbe's forum shopping efforts are not successful. Hombori's attempt to solve the conflict by defining a passage corridor was not kept and the year after, the herders are arrested again. It is clear that although the structures of power are not formalised the Kel Tamashek chief are in a strong position provided his contacts in the administration. So despite the arguments about equal rights for all Malian citizens and reference to tradition, the sedentary chiefs privileged rights to the lake wins. Although the conflict between Hombori and Gossi over the ownership of Agoufou is not officially settled and Hombori still claims that it belongs to them it is de facto Gossi which authorize and supports the Kel Tamashek chief's claim to the lake.

Although the law says that surface water sources cannot be privatised, the Kel Tamashek have introduced unwritten rules about where migrating herders can water their animals. These rules are contested by the Fulbe. Although the Fulbe and the Kel Tamashek both claim access to the lake and the land they do not have the same power to access and control the resources. The permanency of the lake has affected the power relations between the users. When the lake became permanent it opened a window of opportunity for appropriation, which the groups are in an unequal position to exploit. The Fulbe herders that used to come in the rainy season are now faced with new user groups who have adopted

more sedentary livelihood strategies in order to claim exclusive or at least privileged access rights to the lake. What further weakens the Fulbe herders' position *vis-à-vis* the chiefs are that within the social organization of the Fulbe it is usually the young men who conduct cattle on long distance migration. In some cases, the herds belong to rich businessmen from the major towns and the herder is hired to take care of the animals. Because the herders are often just young men, they do not have the necessary assets to negotiate access to resources against local chiefs, and they are excluded from both decision making processes and free access to the lake.

It could be argued, of course, that the case of Agofou is unusual and uncommon in that it represents a situation where a water resource has appeared unexpectedly and in the midst of an institutional restructuring process. However climatically caused unpredictability is not a new phenomenon in the Sahel as well as it may very well become more widespread in the future. In addition, the processes in which institutions compete for authority and control is ongoing (see Lund 2006). The following case from Zambia, furthermore, suggests that some of the basic features evident from Agofou may also happen in the context of more planned water development.

PLANNED WATER: THE CASE OF THE MUCHILA BOREHOLES, ZAMBIA

Muchila Chiefdom lies in the South-western part of Namwala district in Southern Zambia. Namwala district has traditionally been one of the poorest in the country, and although infrastructure in the area is now gradually developing, many parts of the district remain relatively remote with high poverty rates. This is especially the case for Muchila Chiefdom in the Southern part of the district: Its remoteness and relatively low population numbers has meant that neither the local Chief nor Local Government representatives have had much clout in district politics.

Traditionally the population of Muchila has consisted of Ila pastoralists, who like other Ila communities in the district migrate their cattle out of the Chiefdom to the Kafue river during the dry season. However, the area also has a substantial immigration of Tonga crop farmers, who arrive from neighbouring districts in search of vacant land for cultivating cash crops including maize, cotton and vegetables. That said, wealthy Ila pastoralists (including the Chief himself) continue to have a highly influential role in Muchila politics, and cattle remains a high priority and ambition for many households.

Water infrastructure in Muchila is sparse and does not match that of other Chiefdoms in the district. The area has few natural streams (virtually none in the dry season), and only a small number of the so-called *dambos* (small shallow wetland areas) that are otherwise an important water source in rural Zambia. Better-off households typically own a private hand-dug "deep well" situated on their land, whereas poorer households resort to communally accessible water

points such as seasonal streams, dambos and boreholes, and/or shallow wells dug in stream beds during the dry season. Access to surface water such as seasonal streams and dambos has traditionally been considered a basic right for all; whereas groundwater from the deeper wells on private land belong to land owners.

In response to the high pressure on water resources in Muchila, a number of new boreholes have in recent years been established in the area, facilitated by the District water authorities and funded variously by international aid agencies and NGOs. The boreholes are intended for communal use by all community members, and are managed by community borehole committees elected by villagers. Rules for access to and use of the boreholes are developed by communities themselves through the borehole committees.

The development of the new boreholes is the subject of intense interest by all community members, as they potentially provide year-round access to water resources for both domestic and productive uses. Borehole construction is often the subject of conflicts between different types of users within the same villages, including disputes over the location of boreholes, the rules of access and the principles of representation in borehole committees. Such conflicts take place in a number of locations across the District where boreholes are developed (Funder et al. 2010; Mweemba et al. 2010), but the situation in Muchila is aggravated by a particularly poor water infrastructure and an increasing pressure on water resources as newly migrated households add to the number of water users.

The establishment of boreholes is furthermore set within a context of local institutional competition over authority and influence in water resources development. According to formal water law, water is managed by state water authorities, in Muchila represented by the District Water officers who visit the area occasionally and take part in planning of borehole development and facilitate access to funds. Given its colonial origins, the water law is however focused on large-scale commercial uses and does not address local water uses and mandates to any great extent. At the same time, the broader legal framework recognizes the authority of Chiefs in the allocation of land and other natural resources on community land, a role that is also broadly recognized by most community members (Chileshe et al. 2005; Haller 2007). Zambian decentralisation policies furthermore provide Local Government authorities with rural development responsibilities that include water infrastructure development.

Against this background Chiefs, Headmen, Local Government Councilors and District Water Officers engage in a rarely voiced but very real competition for authority and legitimacy in water resources development in the area. This competition evolves partly around authority in water resources development itself, as a crucial and highly contested aspect of local production and livelihoods, and partly around the wider political benefits that can be had from being seen as

provider of “development” itself, through provision of crucial new water infrastructure.

It is within this highly politicized context that access to and control over the new communal water resources offered by boreholes is developed. One illustration of this is the Kumalesha borehole, established in 2003 to serve 5 subvillages in the area. Following construction of the borehole, a committee was established to govern and manage the borehole. The committee included 12 community members, representing the different subvillages according to number of households. Members were elected at a public meeting, with a resulting gender ratio of 4 women and 8 men. The committee was dominated by wealthy cattle owners who lived in the original central area of the community, and who had a wide patronage network among community members that helped ensure votes.

The committee set about establishing rules for use and maintenance of the borehole. This included a payment scheme whereby users would contribute an annual “affiliation fee”. Households not paying the affiliation fee would not be allowed access. An exemption was made from households known to be “vulnerable”, who instead of cash money would contribute through e.g. labour (cleaning around the borehole). Simple rules for borehole maintenance were also developed, related mainly to cleanliness, but apart from this no further rules were developed at this point. As a result, fee payment was the only principle of access at this point, with the quantity and timing of water extraction from the boreholes being left open to users.

In the first dry season after construction of the borehole, a conflict gradually developed between men who came to water cattle, and women collecting water for domestic purposes and gardening. The former group felt that cattle had primacy of access to the borehole, and asked women to go elsewhere or wait (sometimes up to a full day). For the women, this meant they were restrained in accessing domestic water, and unable to water gardens that provided an important supplement to the diet and a source of supplementary cash-incomes. Women from the middle and wealthy strata typically came from cattle-owning households themselves, and some even “owned” a small number of their household’s cattle, as part of the social security system for women in case of the husband’s death or divorce. The poorest households in the area typically did not own cattle, although some were involved in the cattle-economy in the role as “stewards” of cattle for wealthier households. The issue for the women was therefore not to actually stop cattle’s access to the borehole, but rather to ensure *equal* access to water for cattle, gardening and domestic uses.

In order to achieve more equal access between the different uses, a group of better-off women made a formal complaint to the borehole committee. The latter initially ignored the issue, dominated as it was by the same wealthy men who watered their cattle at the borehole. In response to this, the women exploited the fact that some among them were related to the Chief of Muchila. Through their

connections, they complained their case and asked him to exercise pressure on the borehole committee.

The Chief was at this point interested in exercising greater influence over the boreholes of the area, which he felt were moving beyond his control – partly in terms of independent rule development by the committees, and partly in terms of local strongmen dominating these committees. He therefore proposed that a timetable be developed for the boreholes, according to which different users could access it a different times of the day. The idea for such a schedule had originally come to the Chief from a District Water Officer, who considered the Borehole Committees in the area corrupt and was eager to influence the situation.

The leading members of the borehole at first resisted the proposal, arguing that it was up to the borehole users and their representatives (i.e. the committee) to determine the rules of access. This was in itself a rather daring - though not unheard of - action. Prominent in this was the head of the borehole committee, a wealthy Ila pastoralist and Headman who in the eyes of some community members and other Headmen in the area had captured the borehole as a vantage point for promoting his position and reputation as “water provider”. The Chief insisted however, and eventually a community meeting was called by the borehole committee to discuss the proposal. The timetable was agreed upon, and it was stipulated that the borehole was reserved for collection of water for domestic use and gardening in the mornings and late afternoons, while the intervening hours were allocated to watering for cattle. Specific rules regarding how the cattle) and gardens should be watered according to a rotational system were also developed.

In the months immediately following the establishment of the new rules, they were well honoured by both sides. However, after a while an increasing number of male livestock owners began violating the rules and turning up at any given time, claiming immediate access for their cattle. They found it impractical to reserve watering of the cattle for a particular time period, and claimed that the agreed rules had only been a guideline. Seeking a means of responding to this, the women chose not to bring the Chief into the matter on this occasion: He had recently taken control over a neighbouring borehole, partly as a means to profile himself as a water “provider” and -authority in the area, and partly to accumulate user fees.

Not wishing to risk this for their borehole, the women instead turned to the Councillor and Chairman of the Area Development Committee. Both had on previous occasions sought to position themselves as the “true” developers of the area, and informally criticized the Chief of seeking only his own interests in water development. The Councillor and ADC Chairman thus saw an opportunity to leverage themselves against the Chief and at the suggestion of the women they called a meeting community meeting to discuss the borehole situation. At the

meeting they proposed that the borehole committee had been sitting for a sufficient length of time and that it was now time to replace it with a new cast of committee members. They further pointed to maintenance problems of the borehole.

Again, the borehole committee was not officially under the authority of the Councillor, but they nevertheless constituted important, high-profile authorities. Some members of the borehole committee were furthermore wary of the Chief's "capture" of the neighbouring borehole, and therefore sought allies in water development. Eventually the existing Borehole Committee agreed to step down, and it was agreed to elect a new Committee with a more equal gender representation and a greater spread of members from different sections of the community.

Throughout this process, the poorest members of the community responded in different ways, which can broadly be categorized into three different strategies: (i) Some poor households were dependent on the better off livestock owners, acting as minders of cattle in return for labour, draught power, milk etc. These households chose not to engage in the conflict, fearing sanctions from the patrons on which they depended. (ii) Other poor households withdrew from use of the borehole at the very beginning on their own account. They predicted that they would loose out to the more powerful households anyway, and preferred instead to draw water from shallow wells and other water points which were of a poorer quality but where they were less exposed to the domination of the wealthy households. Finally, a third group of the poorest households sought to influence matters through discrete private lobbying with community members of higher status that they considered "safe" – i.e. people they knew or felt were on their side, such as a local school teacher and a clinic worker¹⁹. They also supported the better-off women in their efforts to challenge the domination of livestock uses.

While the poorest households in the community thereby acted quite consciously – but in different ways – in response to the borehole development, the eventual outcome of the situation for them was one of marginalization. This included the otherwise improved conditions for access and representation achieved through the efforts of the women who had opposed the borehole community: Soon after these were established, the better-off women began monopolizing access to the borehole for domestic water uses, and furthermore used their increased influence on the borehole committee to secure a set of rules for watering of vegetable gardens which favoured households nearest to the borehole – i.e. their own – at the disadvantage of the poorest households who lived further away.

The dynamics of local rule development

¹⁹ For a more detailed discussion of these strategies, see: Funder et al. in prep.

The case of the Muchila boreholes illustrates again, as in the case of Mali, how the rules and organizing practices around a new water resource may develop out of the interplay of different local competing users and authorities, and not necessarily within the complete control of authorities at higher levels. Such processes are, for one thing, quite far from the ideal notion of a “blueprint” collaborative process whereby the involved users “sit down” at the outset to plan particular rules of access and organization for a new communal water resource. Indeed, as illustrated by the case of Muchila, powerful actors may have a distinct interest in *not* developing any explicit rules of access other than required maintenance fees etc., thereby allowing certain groups of dominant actors (in this case, the male pastoralists who initially dominate the borehole committee) to gain priority of access through more implicit and casual exercise of power in everyday water use.

Yet what the Muchila case also illustrates is that even such structurally determined outcomes may be challenged and countered, if users lack the necessary assets and room for manoeuvre to do so. In Muchila we see how the various forum shopping efforts of a certain group of women eventually lead to the development of particular rules of access (the time schedule), as well as a restructuring of the principles of control of that access (the revised gender ratio in the borehole committee).

As such the case of Muchila also points to the importance of taking a less deterministic view on the role of cooperation and conflict in the development of water management rules. The case described here illustrates a process of both conflictive and cooperative interactions between the involved actors – such as when the women at first challenge the borehole committee, and later cooperate with its members to agree on a timetable for access (see also Funder et al. 2010). This in turn illustrates how the evolution of rules and organisation around new communal water sources may come about not only through cooperation but also through conflict between actors.

The idiosyncrasies of local water access rules

The case of Muchila shows us how even a singular, small-scale collective water infrastructure such as a borehole can be subject to a complex process of institutional development. In a context where central government officers, local government authorities and local chiefs and headmen compete for institutional authority in water governance, new boreholes and their associated management committees constitute unsettled governance spaces where authority and rules of access are not clearly defined and are open to interpretation and negotiation (Juul and Lund 2002). Hence for these authorities even an individual borehole may be significant to invest time and effort in – partly to demonstrate their own authority and legitimacy, but also to keep in check the rise of new players in the institutional landscape, including the borehole committees themselves. As one

Local Government employee put it: *"If all these... [borehole committees]... make their own decisions without listening to us, how can we ever achieve the development plans for this place?"*²⁰.

Where local users are able to exploit the competing interests between different authorities, the rules of access and control that develop may become semi-autonomous "pockets" or "niches" within the wider local water governance frameworks, which may be temporary or of a more enduring nature and which are not fully controlled by one or the other authority. In Muchila, this is evident in the case of the wealthy pastoralist men who conduct a classic case of 'elite capture' (Labonne and Chase 2009) of the borehole committee, thereby imposing a regime that is condoned neither by the Chief or the Local Government authorities. And it is evident in the manoeuvrings of the group of women who at first seek the support of the Chief, only to later avoid him in favour of the public authorities.

The case of Muchila thus implies that rules of access and control may develop differently between individual water points, depending on the particular users and interactions involved. This does not, of course, mean that the development of rules for "new" water resources are somehow entirely delinked from existing ones. This is also evident in the case of Muchila, where the principle of a timetable for water uses was adopted from the neighbouring borehole. Nevertheless, because of the manoeuvrings of both users and competing institutions, the principles for representation eventually evolve differently for the Muchila borehole than it does for e.g. the neighbouring borehole, which ended up under the direct command of the Chief. Similar differences were found among boreholes being established elsewhere in the District, which showed numerous variations in the rules for access and representation.

Rules and assets

At this point it is fundamentally important not to imply that individual village committees or groups of users are somehow able to counter and change rules of access and control at will. While it seems clear that neither the Chief nor the Local Councillor in Muchila have complete control over the rules development process at the borehole, they are nevertheless highly influential players whose agency and assertion of authority play a significant part in the process.

At the same time, it is clear that while a particular group of women gain from their efforts to increase access, the poorest households do not. In this respect it is

²⁰ As another illustration of this, a neighboring Chief was concerned at the increasing independence of a borehole committee whose members opposed his plans for water infrastructure development. He eventually managed to disband the committee on the grounds that it was inefficient and corrupt, and orchestrated that the new committee should consist entirely of women, of whom several turned out to be his closely related kin.

worth noting how the only initial criteria of access – the user fees – have not been subject to contestation in Muchila. Most households paid without complaints, while the poorest households benefitted from the customary principle that such households may gain access to water through in-kind payments such as labour (in this case, contributing to keeping the borehole clean etc.). In Muchila it is thus not so much the direct funds needed to access the borehole that are the issue, but rather other and more implicit types of assets. Such assets may be explicitly required to fulfil the formal rules (being able to pay a user fee, being a man or woman etc.), or they may be implicit and associated with the ability to defend one's claims and interests in the rules development process – i.e. the status, influence, networks required to become elected for a borehole committee, to contact the Chief and Councillor, to argue one's case convincingly, as well as more fundamental forms of economic capital such as having land near the borehole. Attached to the formal rule-set is thus an underlying requirement of particular assets that are required to exercise control of and access to the borehole. In Muchila as in most other places, the poorest possessed neither of these and were thus marginalized from the process and the increased access for domestic users that eventually came about.

CONCLUDING DISCUSSION

In water-scarce settings, the development of collective new water resources – whether planned or unplanned - can be seen as social arenas in which local actors may affirm, challenge or modify broader rules and authorities in local water governance. In some contexts, the development of such new water resources will be controlled from the outset by powerful authorities or other actors. In such cases, rules and organizing practices may be cast in stone with little opportunity or incentive to modify them – thereby extending or consolidate the authority and rule-sets of those in control. Yet the cases discussed here illustrate that the emergence of new collective water resources may also lead to situations where authority, legitimacy and rules of access around a particular water source are “unsettled” for shorter or longer periods of time, and where the resulting institutional evolution may take on a highly localized and idiosyncratic form.

In our case studies, several factors contributed to such unsettled situations: Firstly, the basic emergence of new water resources in new locations means that clear rules for their use and control may not exist, or are open to interpretation, or simply provide an opportunity to challenge the prevailing regime. This is perhaps particularly so in previously marginal areas where significant socio-economic and land use changes are taking place, as is the case in both Agoufou and Muchila. Secondly, such features may be further compounded when collective new water resources are accompanied by the introduction of new and “participatory” institutions. In our Zambian case, we saw how the establishment of a borehole committee not only introduced new institutional arenas and players on the scene,

but also – through the “participatory” rules development etc. - opened for the emergence of new or “tweaked” rules and organising practices around individual boreholes. Thirdly, where wider institutional frameworks for (water) governance are contested or fragmented, multiple competing claims to water resources may be made and sought exploited by both institutional actors and users. The case from Mali shows how such situations are related to wider process of governance change, such as decentralization policies and local politics i.e. competition for voters and tax income.

In both our cases users and authorities struggle to assert their claims and authority in such unsettled situations, and thereby come to affect the development of rules and authorities around the new water resources. This is evident partly in the explicit rules that develop around access and organization, as illustrated in the Zambian case where the actions of a group of women lead to the development of a timetable for sharing access between productive and domestic uses, and eventually the instalment of a new borehole committee with more equitable rules for gender representation. Yet the interactions between users and authorities also lead to the development of more implicit “rules” about the types of assets that are indirectly needed to access and control the new water resources. In this respect, the case studies discussed here emphasize how not only economic but also social and cultural assets may be significant in such circumstances. In the case from Mali, a discourse of belonging between users translates into an implied principle that claims of access to the new water resource is conditional on following a fully or semi-sedentary livelihoods, which also require the right connection higher up in the administration. In the Zambian case, issues of gender and social networks play a key role.

Both of the cases discussed here lead to situations where the rules of access and control over the new water resources can be seen as semi-autonomous micro-regimes, developed as a result of the specific conflictive and cooperative interactions of specific users and institutional players - and where the explicit and implicit rules and assets governing access and control may be influenced by wider structures but also retain a degree of semi-autonomous power relations²¹. From a normative viewpoint, such water governance “niches” may be positive to the extent where they provide spaces for local water users to assume greater control of - and access to - water resources. However, as illustrated by both our cases, such niches will often be dominated and sometimes even captured by those who prevail in defining the rules and assets in question – potentially leading to the marginalisation or full exclusion of those who cannot meet the explicit or implicit criteria defined by the rules.

²¹ The notion of semi-autonomous fields has been applied in legal anthropology, see eg Moore (1978). In a broader sense Bourdieu (1997) applied the concept in sociology to describe how social relations and practices within different social spheres of society may be partly semi-autonomous according to the particular values afforded to particular forms of social, economic and symbolic forms of capital in a given social field.

From a developmental perspective, there is a need to ensure that local institutional development around collective new water resources leads to de facto equitable access and control. Importantly, this should not be taken to imply that institutional development by local water users will somehow inevitably result in elite capture and domination, and that they therefore need to be “managed” by higher authorities. As illustrated by the success of the Zambian women in Muchila, local actors are able agents who can and should be prime movers in developing management principles over collective (new) water resources.

At the same time, however, the cases discussed here do suggest a need to ensure that such local institutional developments take place in a context that offers opportunities for aggrieved parties without the necessary assets to seek alternative support. Addressing this in practice include (i) development of crosscutting basic principles of access to new water resources at e.g. district or subdistrict levels, upon which specific local rules are developed at individual water points; and (ii) ensuring that alternative institutional spaces continue to exist for addressing grievances and negotiating disputes, and making these accessible not only for the well-connected and better off – thereby building on the positive aspects of “forum shopping” strategies and avoiding that marginalised actors are restricted to monolithic local institutional structures that may be dominated by particular user groups.

Efforts in this direction cannot, of course, in themselves address the basic inequalities that exist between water users in broader socioeconomic terms, and clearly need to be complemented by broader parallel efforts that address fundamental aspects of local land use, livelihoods and poverty. Nevertheless, by providing a supportive framework for ensuring equality in local water governance, they may be able to add to and build on the ongoing institutional dynamics that surround new water development in places such as Agoufou and Muchila.

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