



Restoring the Commons: A Gendered Analysis of Customary Water Tenure in Sub-Saharan Africa

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MANAGING AFRICAN
COMMONS IN THE
CONTEXT OF COVID-19
CHALLENGES (GUEST
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ABSTRACT

Customary water tenure in low-and middle-income rural areas has received limited academic, policy, and legal attention as yet. This paper seeks to conceptualize and analyse gender-differentiated living customary water tenure, focusing on sub-Saharan Africa. Extensive literature review suggests four gendered domains: first, water needs and uses; second, strategies to meet those needs by directly accessing water sources, and, with increasing wealth by investing individually or collectively in water infrastructure for self-supply, creating infrastructure-related ‘commons’ in the case of collective systems; third, at community scale, the ‘sharing in’ of communities’ naturally available water resources that flow into infrastructure; and, fourth, ‘sharing out’ of those resources with neighbouring communities but also powerful third parties of foreign and national high impact users. Rendering the gendered community more visible as the main agent to manage its water resources as the commons provides evidence for a range of policies, laws and interventions, including gender equitable and community-led water infrastructure development integrating domestic and productive spheres; strengthening customary arrangements to share water resources as a commons within a community or with neighbouring communities, and the long overdue formal protection of customary water tenure against ‘water grabs’ by powerful third parties.

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INTRODUCTION

RATIONALE AND AIM

By its physical nature, water resources are a ‘commons’ up to the global hydrological cycle. Rainfall, run off, and evaporation connect all people and ecosystems of the planet. Yet, an integrated commons lens to water resources governance and tenure, let alone its linkages with other resource tenure is still lacking. Academic knowledge, discourses, policies, laws, and programs are at best fragmented, or even contradictory. Sectoral divides prevail among water professionals: between sectors such as the Water, Sanitation and Hygiene and irrigation sectors or between engineers and water resource managers or lawyers (Hall et al, 2014; Van Koppen et al, 2014; Hellum et al, 2015). Legislation governing water, residential land, crop land, grazing land or forests, is also typically silo-ed, in spite of the physical and legal links between land and water (RRI/ELI 2020). Moreover, unlike the wide recognition of legal pluralism (Von Benda-Beckmann et al, 1998; Benjaminsen and Lund 2003; Meinzen-Dick and Nkonya 2007) and customary land or forest tenure, little attention has been paid as yet to customary water tenure,¹ vested in rural communities and part and parcel of the integrated, holistic governance of land, forests, grazing land and other natural resources linked to their social territories. The ground breaking study by RRI/ELI (2020) of the recognition of customary water tenure in 15 African, Asian and Latin American countries (RRI/ELI 2020) even found that water legislation lags behind other resource tenure legislation and other water-relevant statutory law. This renders rural communities very vulnerable to the ‘lawful water grabs’ by powerful third parties, including the pre- and post-colonial state and corporate business sector of large-scale agriculture, mining and tourist industry. Evidence confirms how by ignoring customary water tenure, rural communities are side-lined in the sharing of common water resources beyond communities at larger, national and even transboundary scales (Onyango et al, 2007; Borrás et al, 2011; Franco et al, 2013; Komakech 2013; Van Eeden et al, 2016; Van Koppen and Schreiner 2018; Schreiner and Van Koppen 2018).

This paper explores how women and men in communities in low-income rural areas, free from specialist and administrative silos, but vulnerable to infringement on their water rights by powerful third parties, have customarily managed water resources since ancient times. A gender perspective deepens insights in vulnerabilities that are specific for variable and unpredictable natural water resources, but that are often overlooked even within the water sector. Understanding communities’ agency is key to genuine community-led water services (Galvin 2011). Moreover, as we will see, customary norms underline

water resources as a commons. Without unravelling policy implications in further detail in this paper, further evidence of gendered customary water tenure remains a necessary condition for states to accept that the nation’s and transboundary water resources are a commons at larger scales, in which equitable and just sharing means, in any case, legally respecting, protecting and supporting resource-poor communities’ hitherto informal efforts to develop and share water.

METHODOLOGY

Based on an extensive literature review, including the author’s published field research and continued dialogue with water authorities and policy makers, four domains in water tenure were identified that account for the often misunderstood, highly specific nature of water resources, overcome academic and administrative silos, enable a gendered analysis and conceptualize the interface between customary and statutory law in a policy relevant manner. These domains are illustrated by examples from the literature.

This methodology has limitations. Obviously, there is no ‘pure’ living customary tenure. As a semi-autonomous social field, interactions with the ‘outside’ world remain profound. This includes the colonial divide-and-rule that created allied tribal authority structures as employees of the colonial state in ‘perverted tribalism’ (Mamdani 1996), and continued co-option of chiefs in deals with powerful parties, for example mines, in their resource capture. In local ‘forum shopping’ people invoke the rules that serve their interests best. These are locally negotiated hybrids (Von Benda Beckman et al, 1998).

We also realize that the gross generalization into four domains with selected illustrations fails to do justice to the profound meanings of customary tenure in own language and culture and to the immense diversity and rapid changes across an entire continent in class and gender differences and in economic, social, political and cultural conditions, weather and climate, geographies, resource endowments, populations, health, – rapidly changing – water and other technologies and energy sources, markets, and roles and powers of the state. Our only goal is to shed more light than before on women’s and men’s customary perspectives on water as the commons, and provide evidence for potential far-reaching implications for public policy, law and programs.

The paper is structured according to these four domains. First we trace resource-poor women’s and men’s priority domestic and small-scale productive water needs and uses, recognizing the reproductive spheres as inseparable from productive spheres and equally important (in section 2).

Second, in order to meet these needs, resource-poor women and men access naturally available water resources

for direct use, but since historical times, they also, and increasingly, have invested in infrastructure for self-supply, either individually, or as self-organized sub-groups, or as entire communities. Water stored and conveyed by infrastructure makes more water resources available at the preferred times and sites of use: homesteads, distant fields or other sites of uses. The joint management of collective infrastructure by large, self-organized groups in Asia has been a clear example of the commons (Pradhan 1989; Schlager and Ostrom 1992; Ostrom 1994). This self-supply is rapidly expanding and shaping customary water tenure (section 3).

Investments in infrastructure suppose that naturally available water resources keep flowing into this infrastructure. The governance of these resources takes place at the community level. Naturally available water resources that fall (as rain on roofs, farm fields, grazing areas, forests, and elsewhere), rise from (as springs), flow by (as run-off and streams), wet soils (as soil moisture, wetlands), are stored (in puddles, ponds, lakes), or sit underground (in aquifers) are manifest as multiple sources in communities' socially defined territories. These naturally available resources are 'shared in' by communities and 'shared out' with neighbouring villages or with third parties (Knight et al, 2012) (section 4).

Where evidence was available, we specify according to the bundle of rights. As defined by RRI & ELI (2020) this bundle includes: substantive rights to use water, govern (setting, implementing and enforcing rules and solving disputes), transfer, and exclude, and procedural rights of free, participatory, informed consent in due process (RRI & ELI 2020; FAO 2020). Transfers of water rights take place through kinship (marriage and inheritance), exchange, sale, rental, barter, donation (Boelens 2008 p 55–56). These bundles apply in different ways for claims by gendered investors in infrastructure² to water stored and conveyed or communities' claims to the naturally available water resources in their territories.

Links with land can regard land under, besides or above the source itself; rights of way to pass land to access the source for direct use and to abstract or harness water for infrastructure; land carrying land-bound storage and conveyance infrastructure and finally, claims to the homesteads, distant³ fields or other sites of use, where the benefits of water are derived. When water becomes available at a site, that site gains in value, and land tenure may change.

WOMEN'S AND MEN'S WATER NEEDS

Women and men need water for drinking, food preparation, cooking, cleaning, hand-washing, bathing, laundry, and sanitation. Moreover, in low-income rural settings with

diversified, agriculture-based livelihoods, the overwhelming majority need water for productive uses as well (Van Koppen 2017; Hall et al, 2014; Theis et al, 2018). Water is used and re-used year-round for livestock and fisheries, and also to supplement rainfall to grow vegetables, crops and trees during certain periods of the year or year-round, for crafts, small-scale enterprise such as food preparation for sale, and for incidental events like brick-making and cultural or ceremonial uses. Livestock and irrigation can well have a higher priority than the 'luxury' domestic uses of daily bathing or weekly laundry at home, as found in South Africa (Van Koppen et al, 2020a). For health and hygiene, both water volumes and water quality are important. Three litres per person per day should be safe to drink.

Homesteads are the preferred sites of all domestic uses, but also of several productive uses. Production on or around premises saves travel time, enables combining with other activities and protects against theft (Sutton and Butterworth 2021). For the growing numbers of rural land-poor or landless families who only have homesteads, these are the only site where they can engage in water-dependent food production for nutrition and self-employment.

INFRASTRUCTURE

MULTIPLE WATER SOURCES AND MULTI-PURPOSE INFRASTRUCTURE

In order to meet their water needs, resource-poor women have to walk to naturally available water resources, and directly use water, as for laundry or fisheries, or carry water back. Depending on the spatial lay-out of the multiple surface sources in a community's territory, certainly in the rainy season, women and men choose their preferred one. Other sources serve as back-up during the dry season (Van Koppen et al, 2020b).

For considerably better access, households or collectives also invest in water infrastructure (river diversions, canals, or pipes) to ease transport between any of the multiple surface or groundwater sources and their homesteads, distant fields or other sites of use; or to store water for a day, more days, or months (in buckets, drums, tanks, small and larger dams) to access more water more reliably as buffer against natural fluctuations. Or water is lifted manually or motorized with diesel, electricity and increasingly solar power, from streams, wetlands, lakes or other natural surface water bodies, and, through hand-dug wells and boreholes, from aquifers, the planet's largest year-round storage reservoir. New affordable technologies and energy sources expand such self-supply, meeting the needs of growing populations on smaller and more intensively cultivated land, with growing aspirations for less laborious

water fetching and more wellbeing, and more opportunities for income from markets for irrigated produce or livestock. Such income enables new investments of infrastructure in virtuous circles out of poverty (Giordano et al, 2012; Shah et al, 2020; Woodhouse et al, 2017).

Investors in infrastructure vest strong use, governance, exclusion and alienation claims to the water once the naturally available surface or groundwater sources enter their infrastructure. Coward (1986) called this 'hydraulic property rights creation'. Skills, labour and other costs of maintaining, expanding and rehabilitating infrastructure re-create these claims, which are passed on to heirs. In collective systems, shared infrastructure and shared management of the waters stored and conveyed reflect a 'commons', similar to the farmer-managed schemes that Ostrom (1994) studied in Nepal, as elaborated further below.

Most of the individual or collective infrastructure is multi-purpose, certainly at and around homesteads, unlike the assumption of the silo-ed water sector that schemes designed for domestic uses to homesteads are only used for domestic uses, whereas systems designed for irrigation are only used for irrigation, whether around homesteads or on distant fields (Renwick 2007; Van Koppen et al, 2014). In communities' self-supply, reproductive and productive spheres are integrated. However, control over infrastructure and governance rights to water stored and conveyed, and the division of costs to access water (labour, time, money) and ultimate benefits of the activity in which water is (only) one of the inputs strongly disadvantage women (Theis et al, 2018).

WOMEN'S ACCESS TO INFRASTRUCTURE IN INTRA-HOUSEHOLD DIVISIONS OF COSTS AND BENEFITS

All family members benefit from sufficient water for domestic uses. Men may also prioritize (infrastructure for) domestic uses at homesteads over other uses, as found in a Kenyan case study (Gachenga 2012). Intra-household cooperation and conflict shape the efforts to ensure water supply for every person's drinking, washing, sanitation and laundry, and for food preparation and house cleaning in every one's interest. Among the Gourounsi, Burkina Faso, men are responsible for the infrastructure. Women refuse to marry into their husbands' villages if there are no proper wells for domestic uses. On the other hand, Drangert (1993) describes efforts in Tanzania to incite men to make simple investments in infrastructure for domestic uses, in vain. Men may also impose new demands on women to fetch water for their personal hygiene, as van Houweling (2015) found after a new collective well was installed.

In the case of household connections, whether self-supply or public services, the literature about the gendered division of efforts and benefits is limited, unlike the clear

gender patterns on water fetching from distant sources. Overall, the latter burden falls more often on women and children than on men (Fletcher, A. J., and Schonewille 2015). Men seem to take up more responsibilities to fetch water when 'conveyance' technologies are more advanced, for example carts, bicycles, or cars (Van Koppen 2017; Sutton and Butterworth 2021).

For productive water uses, intra-household cooperation and conflict is also influenced by the many other inputs than water needed for benefits, including seeds, other inputs, and market channels, or veterinary care. The sharing of costs and benefits of supplying water depends on the control over the benefits, or 'fructus' rights as Theis et al. (2018) propose. Women tend to better control the fruits of their labour at and around homesteads than at distant fields. More water boosts homestead production, as found in South Africa. Here, households that received more municipal water undertook more productive activities (Pérez de Mendiguren 2004). Not surprisingly, in Ethiopia, women were found to prefer siting new infrastructure at homesteads enabling both domestic and productive uses (Nigussie et al, 2017).

Women may also manage irrigated cultivation and control produce at distant fields. Women in female-headed households or women with own plots are found to adopt and own irrigation infrastructure, but more often with small-scale cheaper and more labour-intensive infrastructure, such as buckets, while men more often own mechanized infrastructure, as found in Zambia and Ghana (Van Koppen et al, 2013) and Kenya and Tanzania (Njuki et al, 2014). Reasons are diverse. Women's plots may be smaller. Women may lack the money to invest. Or they are less informed about opportunities. Or they prefer crops that gives them more control over the produce, with different crop water requirements (Theis et al, 2018).

Women's weaker land rights are another factor. Tapela (2015) illustrates this in Makuleke, South Africa. Some individual women had taken up irrigation at the riparian strips of a stream in a communal grazing area. This did not require permission from the (male) chief. However, after some years, the chief issued a verdict, which was widely seen as legitimate, that the women could not use the riparian lands anymore, because male livestock owners needed these riparian grazing lands for pasture (Tapela 2015). Household members may also share the irrigation equipment that one of them bought. More research is needed about linkages between women's control over land, cultivation and outputs, and intra-household water infrastructure adoption. This could compare, for example, patrilineal and matrilineal areas, as prevail, for example, in significant parts of Ghana, Mali, Sudan, Tanzania, Malawi, Zambia, DRC, and Mozambique (Meinzen-Dick et al, 2019; Mapedza et al, 2017).

Last but not least, control over infrastructure itself is male-dominated, also in most parts of Africa, even though male control over technology is more pronounced in Asia and Europe. Boserup (1970) traces this back to the plough, the most important agrarian technology over 2000 years ago. In the emerging 'plough culture', men's monopolization of the plough led to an elite class of landed rulers, whose spouses were increasingly relegated to a status of assetless housewives. Among the new landless, both women and men worked for mere survival. In the course of time, poorer women were also disproportionately burdened with domestic chores. However, in most parts of Africa, soils and crops are less suitable for ploughing, among other reasons. The hoe remains the main technology for both women and men until today. In this 'hoe culture', both women and men produce for both food and income, although productivity is low. So the starting point for gender-equitable control over water infrastructure, and technology in general is more equal, but there is still a gap (Van Koppen 2017). This gender bias is also reflected in collective infrastructure processes as a 'commons', as follows.

THE COMMONS OF COLLECTIVE INFRASTRUCTURE

Initiators or founders of collective infrastructure create this 'commons' by liaising with other community members to co-invest and co-decide about the technology to construct and the technical design and lay-out to their preferred sites for their prioritized water uses. This may be led by women. Storing or draining flood waters through coordinated management of bunds in wetland cultivation is an example. In South West Burkina Faso, women dominate such wetland rice cultivation. Plots are 'the precious gift of a mother to her daughter' or are obtained from in-laws. Men, who dominate rainfed agriculture, may not even know the location of their sisters' or wives' rice plots. Male land chiefs can be forbidden to enter, as this would 'cause inundations'. A rule that promotes immediate problem solving by contesters regards the bunds between plots to regulate water. They take up space, so neighbouring farmers are tempted to extend their own field at the expense of the joint bund. The rule is that if they cannot agree, both plots are taken away and returned to the (female) chief of wetlands (Van Koppen 2009).

However, in most other cases, men initiate and keep dominating the governance of self-organized groups with local technicians, typically elder men, to install canal or piped gravity systems; ad hoc channelling of mountainous floods caused by unpredictable rainfall and leading to unpredictable groundwater saturation for spate irrigation and domestic uses (Mehari et al, 2007); or the digging and installation of complex infrastructure, such as deep wells in pastoralists' arid areas (Desalegn et al, 2007; Dahl and

Megerssa 1990). Women join these initiatives, at best, as members only. Men may also monopolize going up into snake-infested bushes around water sources high up in the mountains for risky cutting of rocks to channel water down. Even in the matrilineal mountainous area of the Wa-Luguru in Tanzania, where women and men jointly cultivate women's lands, and dig earthen furrows, some better-off men appeared more pro-active in organizing with few other men to initiate collective furrows (Van Krieken 2017).

Members, women and men, create and confirm their (inheritable) water use rights by contributing to construction and maintenance. Tasks can be gender-differentiated, for example when women's contribution consists of feeding male workers. This should be special and good food 'to provide the energy and motivation for men to dig'. This may require women to find temporary farm work to raise money to buy special food. It is embarrassing if men refuse to eat; 'the whole village will know', as reported among the WaSukuma (Nkonya 2006 p 246).

When water volumes in the system are insufficient to provide everyone water as needed, especially during the dry season, rotational water turns, or, in case of wells, rules for queuing and number of containers to fill are set. Rules can be 'first-come-first-in-right'; equal water quantities for all, irrespective of needs; proportionate to needs, such as family size for domestic uses, or plot sizes or crops for irrigation; or proportionate to labour and cash contributions (Sokile 2005; Van Krieken 2017). Under scarcity, the priority of this multi-purpose infrastructure remains for domestic water uses, livestock watering or water to schools and other public buildings. Yet, rules are not necessarily implemented, and even less for women. Komakech (2013) tells about fierce protests of women irrigators, who constituted 34 percent of the active farmers in the Pangani basin gravity systems. Male farmers took a second turn while women had not received even one turn. The next morning they woke up at 3 am to irrigate during other men's turns, refusing to compensate in any way (Komakech 2013). Sokile found similar discrimination in the Mkoji basin. In principle, rules prioritize water turns respectively to: widows, the poor, disabled, female heads of households, married women cultivating on their own, and men (Sokile 2005). In practice, though, Sokile (2005 p 182), found how male irrigators dressed as magicians scared women irrigators and vulnerable men during the night, so they could take water first. Women had to hire men to scramble for water in this fight.

Men can also intimidate women who seek to abide to the strict rules that govern the area surrounding the wells. These areas are often fenced. Children should only access if accompanied by an adult (Tapela 2015). Nkonya (2006) also found among the WaSukuma, how peace should be kept

and no one is allowed to fight, argue or use abusive language within those areas. Watering of livestock is separated, which can be hardwired in cattle troughs and fences. Water guards and peer-monitoring enforce implementation. However, when men came to draw water, they started quarrelling with the women as the main users of this well, infringing on the rules. Women gave in to avoid conflict (Nkonya 2006). In all these cases of conflict, women have less recourse to male-dominated governance structures of the scheme or other community authority structures.

The foregoing sections showed how women's water needs are customarily met by their own but especially their male kin's investments in infrastructure to abstract the surface or groundwater sources in their communities for multiple uses. Collective schemes require collective action to share the waters that entered the scheme, as one type of 'commons'. However, infrastructure alone is not enough: there should be naturally available surface or groundwater resources to tap and flow into the schemes. These are shared with other community members and often with outsiders, who also directly use water or abstract water. These naturally available water resources are also a shared 'commons' as follows.

SHARING THE WATER RESOURCE COMMONS

'SHARING IN' OF THE COMMONS

Rural women, men and the communities to whom they belong consider water resources as the commons, or a 'res communis omnium' in statutory water law (Caponera 2007). 'Water is given by a god, a higher force and creator, for the benefit of all. Nobody can own water resources' (cf Ramazotti 1996; Drangert 1993; Van Koppen et al, 2005; Sokile 2005; Malzbender et al, 2005; Nkonya 2006; Derman et al, 2007; Kapfudzaruwa and Sowman 2009; Komakech 2013; Hellum et al, 2015). As the Boran say: "Water is either a source that you 'share in' as a member of a descent-based collectivity, or one that you 'share out' to signify respect" (Dahl and Megerssa 1990 cited in Ramazotti 1996 p 89).

Sharing by all does not mean open access for in-groups and even less for out-groups. Within a community, as in any customary resource tenure, 'natural resources belong to living, the deceased and the yet-to-be born' (Tapela 2015). So being born in the community entitles to its natural resources. Resource rights result from the status as a person in a society. As for land, effective use is the most important criterion for claims to the resource. Reference to ancestors buried in the land reflect the communities' rights passing on to next generations (Tapela 2015). Kinship, in

particular marriage and inheritance, remain the most important way to transfer common natural resource rights. Women who marry into the villages of their husbands get some say in the sharing of water resources, but this is weaker than men's.

As there are often multiple sources within a community's territories, negotiations about sharing of water resources are about preferred sources. Powerful men can reject others' access to their preferred water source. Funder et al. (2012) describe such a case in Zambia: a wealthy livestock keeper monopolized a new public well for his cattle as the first and usually only ones. Poorer women decided not to contest, but instead to return to the other sources of lesser quality and at a greater distance.

Communities govern the direct uses of surface water sources. For the division of streams, an upstream part can be reserved for taking water for drinking, whereas other domestic uses (washing, bathing, cleaning of hides) take place downstream; with livestock drinking and bathing in further downstream sections, as found in Tanzania (Nkonya 2006) or South Africa (Kapfudzaruwa and Sowman 2009). Another rule is prevention of pollution of waters. Among the Pedi in South Africa, this was a serious offence, to be punished most severely. Any witness of somebody poisoning water resources was obliged to report to the chief (Monnich 1967).

Communities also govern the sharing of common water resources when community members invest in infrastructure to abstract water resources, which reduces water availability for others. Literature about these arrangements is scarce and gender-blind, but suggests that as long as water resources are available, if not too much, they are open access for community members. Otherwise, water would flow by, or may even be too much, or keeps sitting underground without creating any livelihood benefit. For example, chiefs are found to encourage their 'subjects' to invest and incrementally improve their wellbeing (Maganga et al, 2004). The same holds for livestock breeding and clearing or intensifying cropping: 'if you have the energy to clear the land and work the land, do it' (Sithole 2011 p 152). Or, as community members in Zimbabwe commented on the new uptake of irrigation: 'One cannot deny someone to feed him or her and his or her family' (Derman et al, 2007). Among the WaSangu in the Usangu plains in Tanzania, single individuals tap a stream for own purpose without first consulting the chief (Juma and Maganga 2005).

When competition for the same water sources increases, a 'race to the bottom' for groundwater (Brunns 2020) or 'a race to the top' for surface streams risks to take place. In the race to the bottom, the few wealthiest pump owners that drill deepest 'win', at the expensive of all users with shallower wells, including wells used for domestic

purposes. In the race to the top of surface streams, new investors prefer putting their intakes and pipes upstream of prior intakes, so they can access fuller streams. Invoking the ‘first-come-first-in-right’ principle, new investors can be required to put their point of abstraction downstream. This was noted in several cases in South Africa. In one such case, a written recording of prior investments kept in custody with the traditional authorities served as proof (Hofstetter et al, 2021). However, elsewhere there was no first-come-first-in-right rule, or other rule. In the anarchic race to the top, others’ intakes were frequently tampered (Van Koppen et al, 2021).

‘SHARING OUT’ OF THE COMMONS

In the sharing out of water resources with neighbouring communities, Desalegn et al, (2007) found that consciousness of clan territory is more intense nearer to the water sources. Elsewhere as well, outsiders should ask permission to access water sources within other communities’ territories, even if never refused. Also, conditions can be set to the rights of way, for example livestock keepers should take the shortest route to the water source and grazing underway is strictly forbidden. Also, some form of compensation, however small, may be required in exchange (Ramazotti 1996, p.95).

When downstream communities start suffering from water diversions by upstream communities, they typically take the initiative to approach upstream users, as also found in the Sekororo area in South Africa (Sithole 2011). Negotiations are about the flows, either in shares or in turns, that upstream users should leave in the stream. Moore and Puritt (1977) document how the Chhaga repeatedly negotiated with upstream users. In the course of time, communities expanded vertically uphill. Authority structures became more rooted in water leaders than in kinship. Sharing agreements are hard-wired in visible, flexible, proportionate diversion structures (Lankford and Mwaruvanda 2007). In the Mkoji sub-catchment, the rotation (or ‘zamu’) follows the days of the week. Sokile (2005) found how conflict resolution by a new agreement was celebrated with the slaughtering of a cow.

Komakech (2013) analyses similar processes in the Pangani basin. Downstream users approached the Masaai who had settled upstream and also defended their prior claims (Komakech 2013). With growing competition for water, weirs that diverted water upstream were destroyed. One conflict became fatal. To avoid this extreme violence, river committees were formed to negotiate settlements of sharing rules primarily through rotation. Guards were appointed to enforce the rules and paid with collected fees. However, downstream users paid the fees and respected

the appointed water guards more faithfully than upstream users. Based on this and research elsewhere, Komakech hypothesized that ‘the larger the spatial extent between upstream and downstream users, the more difficult it is for such institutional arrangements to emerge from the bottom-up’ (Komakech 2013). Indeed, these sharing arrangements are ‘a gradual negotiation process that recognizes the slow maturation of institutional building, are technically tested and socially sanctioned, and are prone to redefinition when circumstances change’ (Molle 2004).

CONCLUSIONS: RESTORING THE COMMONS

This paper linked vulnerable farming and pastoralist communities and water in sub Saharan Africa by starting with their multiple water uses and then by tracing the ways to realize these uses directly but especially by still heavily male-dominated investments in multi-purpose infrastructure as households or sub-groups or entire communities, in which collectively held infrastructure is self-governed as a commons. Then, the paper looked at the naturally available water resources that flow into infrastructure as another commons that communities share according to customary arrangements when competition grows under droughts and when more people increase their water uses. Communities share water resources internally, but, as water flows, also with adjacent customary communities. However, customary norms to share water are over-ridden by powerful upstream, downstream or encroaching external parties.

Much more research is needed to address specificities across a whole continent. Yet, rendering communities visible as the main agent to manage its water resources as the commons, both for collective infrastructure and sharing of naturally available water resources, has already implications for policies, laws and interventions. It calls for more gender equitable water infrastructure development that integrates both domestic and productive water needs unlike the fragmented administrative silos; that empowers women; and that recognizes and supports people’s own investments in infrastructure. If external support agencies seek to mediate in conflicts about water resource sharing within a community or with neighbouring communities, customary arrangements to share water resources as a commons can be the starting point. Most importantly, though, the visibility and recognition of customary water tenure is key to the long overdue formal protection of customary water tenure against ‘water grabs’ by powerful external third parties.

NOTES

- 1 As the term ‘law’ may be misinterpreted as confined to state law only, we use the term ‘water tenure’. Water tenure is the relationship, whether legally or customarily defined, between people, as individuals or groups, with respect to water resources (FAO 2020).
- 2 The term ‘investor’ highlights that infrastructure planning, design, construction, operation and maintenance requires continuous efforts before benefits can be gained.
- 3 ‘Distant’ means that infrastructure to homesteads does not reach the field; water is not necessarily needed 24/7 year-round either.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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