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Roman water law in rural Africa: the unfinished business of colonial dispossession

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This paper discusses four questions about the recent water law reforms in Sub-Saharan Africa, which strengthen permit systems. First, do permit systems continue to dispossess rural small-scale users, as intended by European colonizers who introduced principles of Roman law? Second, is it wrong to assume that one can convert one legal system (customary water rights) into another legal system (permits) in the short term? Third, do current permit systems discriminate against small-scale users? And lastly, do fiscal measures ingrained in permits foster rent seeking and strengthen water resources as a commodity for nationals and foreigners who can pay? As all the answers are positive, the paper concludes by recommending measures to recognize and protect small-scale water users and render state regulation more realistic.

Keywords: Sub-Saharan Africa; colonization; legal pluralism; water law; water resource management

Introduction

Background and research questions

In the global wave of water law reform since the 1960s, many governments have strengthened or introduced permit systems. This occurred in high-income countries, such as the United Kingdom in 1963 and France in 1964, and in middle-income countries in Latin America, for example, Chile (Water Code of 1981) and Mexico (National Waters Law of 1992). Water laws were also revised in Sub-Saharan Africa, the focus of this paper.

Existing permit systems were strengthened in Mozambique (Ley de Agua 1991, followed by the License and Concession Regulations Decree, No. 43/2007), Uganda (Water Act 1997), Zimbabwe (Water Acts No. 31/1998, 22/2001, 13/2002, 14/2002. Chapter 20:24), Burkina Faso (Loi d'orientation relative à la gestion de l'eau 2001), Swaziland (Water Act 2003), Kenya (Water Act 2002, currently being revised), Tanzania (2009 Water Resource Management Act, No. 11) and Zambia (Water Resources Management Act, No. 21 of 2011). In Ghana (Water Resources Commission Act 1996) and South Africa (National Water Act 1998), existing plural water laws were replaced by nation-wide permit systems (see the Appendix for references to the water laws discussed).

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In this paper, “permit systems” refers to licenses, water rights and concessions, which are similar legal tools. Under these regimes, most or all of the nation’s waters are declared public waters and thereby vested in the state as custodian or public trustee. Citizens can obtain lawful access to water either by applying for administrative permits or by being formally exempted from such obligations. Typical exemptions are for micro-scale domestic and productive uses below a specified threshold, or “*de minimis* uses” (Hodgson, 2004). Threshold definitions differ slightly, for example, irrigation of up to 0.25 ha, water lifted with manual devices, or domestic uses only.

This intensive formal state administration is in sharp contrast to the reality in Sub-Saharan Africa, where 90% of land and related resources such as water are governed under customary arrangements (Hodgson, 2004). The millions of informal, customary or indigenous rural and peri-urban small-scale water users who constitute the large majority of water users obtain access to water by taking it from surface or groundwater sources, largely outside the ambit of the state. Since time immemorial, communities have dug their own wells, built their own reservoirs and diverted floodwaters and streams for domestic uses, irrigation, livestock, small enterprises, health uses, food security, income, and ceremonial uses. Intricate collective arrangements have evolved over upstream–downstream river stretches and nomadic transboundary pasture areas. Innovations in plastics, motors and rural energy provision have accelerated people’s informal investments. These arrangements governing informal self-supply will remain an important part of rural and peri-urban water provision for decades to come, if not forever (Komakech, 2013; Mehari, Van Steenberg, & Schultz, 2007; Shah, 2007; Van Koppen, Giordano, & Butterworth, 2007).

The recent strengthening of permit systems for centralized titling stand out against the lessons from half a century of land-tenure debates. Intensive efforts to replace customary land tenure with statutory centralized titling systems introduced from Europe have failed. Modern African land policies now recognize that the state cannot ignore the reality of existing customary land rights and that tenure regimes need to build on existing systems. Around 10 African states have therefore provided new land laws which recognize customary landholding as having the force of property as obtained under introduced regimes (Alden Wily, 2011a, 2011b; McAuslan, 2005). Water resources are definitely more difficult to demarcate and register in a legally binding manner than land resources. Water is a “fugitive” resource; that is, quantities vary each day, certainly in rural areas where water availability largely depends upon rainfall because water control through infrastructure is lacking.

Moreover, water law reforms seem at odds with the fact that only 6% of the water resources in Sub-Saharan Africa have been developed (Bahri et al., 2010). One would expect under-sourced governments to focus on the development of water storage and conveyance for socio-economic development instead of establishing costly, resource-intensive regulation of abundant water resources.

This paper aims to examine these contradictions and to trace the implications for informal or customary arrangements. It is structured according to common arguments in debates on this issue. Discussion of the first question, ‘Do permit systems dispossess customary right holders?’, sheds light on legal origins in Roman water law, the confusing dual purpose, and the wide spread of permit systems in Sub-Saharan Africa. The strengthening of permit systems boils down to finishing the unfinished business of colonial dispossession.

A common objection to this claim is that there is no dispossession because prior users can and even should “regularize” existing uses by applying for a permit to render their uses lawful, unless they are formally exempted. The underlying assumption of the proponents of permit systems is that conversion of one legal system into another is possible within the short or medium term.

Proponents of permit systems further argue that permit systems dispossess not only informal rights holders but all water users who have no permits as yet. The assumption behind this argument is that everyone has an equal opportunity to convert existing plural water laws into one uniform system of permits and to apply for permits for new water uptake. Permit systems are seen as non-discriminatory, which this paper argues is a flawed assumption.

The last argument defending permit systems is that even though universal dispossession of all other plural laws may be seen by some as a draconian measure, imposing permits with conditions is worthwhile because it allows neat and orderly state regulation. Conditions include waste discharge limits, defining environmental flows, caps to water quantities allocated or taxation. Throughout Sub-Saharan Africa, fee payment tied to permits has been so deeply entrenched in the daily discourse of permit systems that *permits* and *payment obligations* are often seen as synonymous. The last section focuses on fee payment and exposes what happens in reality. Accepting the fact that state ownership of water resources cannot be reversed, the paper concludes with recommendations to governments to profoundly reform current permit systems into lean, equitable and pro-poor regulatory tools that recognize water as a commons.

A history of widespread dispossession

Permit systems combine entitlements to water with regulation of a common interest. Wherever the sharing of water can lead to conflicts, collective regulation is warranted. However, the history of permit systems shows how this became outright dispossession, especially in Latin America and Africa. At independence, states inherited these permit systems, which explains their wide spread.

Around 500 BC, farming communities around Rome designed water laws in terms of a common interest. They introduced a division between public and private waters. For waters declared private, the owner could do as he pleased. Public waters, however, were governed as a collective interest, for example, for fishing and navigation. The managing of the “collective” was done by a small homogeneous group. However, a thousand years later, “the collective” had become the Roman emperor. By declaring the waters of their conquered tribes public waters, the Roman rulers declared themselves the owners of those waters, whatever their prior uses (Caponera, 1992; Van Koppen, 2007).

In Europe following the collapse of the Roman Empire, customary law prevailed for centuries. When the civil law regimes of continental Western Europe emerged, Roman legal principles, including the distinction between private and public waters, were taken up again, but state powers were minimal. The French bourgeoisie in the early nineteenth century negotiated a declaration that most waters were private. Only waters that were “navigable or floatable” required a collective authority to enable navigation, and were therefore declared public waters that required permitting. The English common law tradition did away with this distinction and adopted the riparian doctrine. In this doctrine, water cannot be owned by anyone. Entitlements to streams are vested in riparians. During Europe’s industrialization, state and private enterprises focused on water provision. This became the business of a small number of well-organized parastatals, municipal utilities and water companies. Individual users had become a minority. When permits were promoted in the 1960s, they were for regulation, in particular of waste discharge (Caponera, 1992).

In their colonies, however, European rulers took the opposite approach. In 1493, the Pope issued a papal bull which

gave the Catholic kings all newly discovered lands, including waters. Water use became the object of special kings' permits granted by the Spanish government authorities for certain purposes, such as domestic drinking needs and irrigation. The permits could be revoked and violations of requirements of the permits were punishable by a fine. (Caponera, 1992)

In Sub-Saharan Africa, Portuguese colonies like Mozambique were considered provinces, subject to Portugal's water law. In 1946, permits (and exemptions) were further formalized as the only way to obtain lawful access to water (Manjate, 2010). The French also diverged from their national practices in their colonies:

Due to climatic circumstances, i.e., of the fact that most African streams are seasonal and therefore non-navigable during certain periods of the year with the consequence that very little is left to the public domain, the distinction between navigable and non-navigable waters disappeared and, generally, all waters were placed in the public domain. Under this regime, every use of public water is subject to the obtention of an administrative authorization, permit or concession. (Caponera, 1992)

In some British colonies, like Zimbabwe, permit systems were adopted (Manzungu & Machiridza, 2005). Similarly, the Tanzanian Water Ordinance of 1948, Chapter 257, stipulates that "the entire property in water within the Territory is hereby vested in the Governor, in trust for His Majesty as Administering Authority for Tanganyika" (Van Koppen et al., 2004).

At independence, the new governments simply shifted ownership of water resources from their colonial rulers to the new independent states, without much reflection. With abundant water resources that hardly required any regulation, the young states had more urgent agendas, such as infrastructure development for socio-economic development. The permit systems remained on the books but dormant, certainly for rural small-scale users (Van Koppen et al., 2004).

Water law reforms: finishing colonial dispossession

In the 1990s, the international pressure for water law reform along the lines of the Chilean Water Code of 1981 revived the colonial legacy under the banner of improving regulation. In civil law countries in Sub-Saharan Africa, governments of the day and international lawyers somewhat changed the texts. More importantly, they started enforcing permit systems, so acting on the assumption that water was traditionally unowned and that they themselves, as the state, were therefore the legitimate owner by default (Alden Wily, 2011a). As a result of the exclusive supremacy of permit systems, all other legal regimes, including customary systems of water ownership, development and management, became unlawful. This also happened in Zimbabwe, where the new law explicitly aimed at redressing historical injustices (Manzungu & Machiridza, 2005).

The global discourse of the 1990s convinced Ghana and South Africa to move away from their riparian doctrine and to adopt permit systems. A de facto dispossession was exposed in Ghana. Referring to the Ghanaian Water Resources Commission Act of 1996, water lawyer Sarpong commented:

By a stroke of the legislative pen and policy intervention, proprietary and managerial rights which had been held from time immemorial by families, stools, and communities have been taken away from a people some of who probably had no prior knowledge of the matter... The issue is whether the Water Resources Commission Act can unilaterally hive off water from land and provide a separate institutional and legislative framework to address its use...

This is an issue that deserves to be examined having regard to the massive nature of the assault of the legislation on customary proprietary water rights. (Sarpong, n.d.)

In South Africa, where the National Water Act also aims at redressing inequities from the past, white large-scale water users negotiated that water entitlements deemed lawful under any earlier act would be recognized as a form of property right under the constitution as “existing lawful uses”. Only *new* water uses have to be permitted, or are exempted (Republic of South Africa [RSA], 1998). An unintended spin-off of these negotiations was that the limited customary rights in the former homelands before 1998 are also recognized as still lawful under the new act. The authors are not aware of any other African country that formally recognizes customary water laws in any way.

The myth of neutral conversion

Those who disagree with the statement that permit systems dispossess users under customary water rights, typically claim that existing water uses are well recognized during the introduction and enforcement of permit systems. Existing users can, and even should, just formalize those former use rights through permits. All water laws grant a period of a few years (which is then repeatedly extended) to water users in which to convert their existing use into a permit by registering and applying for a permit. The South African National Water Act is an exception. Realizing how problematic conversion of one legal system into another can be, specific projects of localized, simultaneous “compulsory licensing” are prescribed.

Water lawyer Caponera, who sees permit systems as the better “modern” law, also warned of the complexities of converting customary law into permits:

In the process of modernizing water resources management and before introducing or implementing modern concepts of water resources policy, administration and legislation, there is the need to undertake a preliminary analysis of the existing legal practices, including the prevailing customs; this survey is necessary in order to define and delimitate clearly the existing customary and traditional water rights... The written recording or registration of existing customary water rights is one of the main characteristics of practically all modern water regulations. (Caponera, 1992)

Unfortunately, nothing could be further from the reality in Sub-Saharan Africa. Studies on informal water laws are scarce (Mohamed-Katerere & Van der Zaag, 2003; Ramazzotti, 1996; Van Koppen et al., 2007). Scholars warn of the risks of codifying local living law (Meinzen-Dick & Nkonya, 2007; Von Benda-Beckmann, Von Benda-Beckmann, & Spiertz, 1998). Moreover, ample experience in Latin America exposed the hazards of codification and “recognition” of Andean indigenous law. Codification “freezes” the essence of dynamic communal resource management. It ignores local specificity and flexibility in response to the constantly changing nature of highly variable water resources. It is bound to recognize only those principles that fit state legislation and are not contrary to it. The complex variety of “disobedient rules” to state rules risk being silenced (Boelens & Dávila, 1998; Boelens & Zwartveen, 2005). Without any codification in the past and without a belief that this is even possible in the future, conversion to permit systems is a pipe dream. The lessons from half a century of efforts to change customary land tenure confirm this, even though sharing land is much less complicated than sharing water.

Comparing water with land, Bolding, Post Uiterweer, and Schippers (2010) expected that the introduction of permits in the upper Revue River catchment in Mozambique, where informal furrow irrigation flourishes, would widen inequities:

It is questionable whether water permits and the official, legal, recognition that comes with it, will not provide another source of patronage exacerbating the gender and equity imbalances observed. Such at least was suggested by the one instance of a smallholder irrigator acquiring a land concession ..., which he subsequently used to establish control over his fellow furrow irrigators. (Bolding et al., 2010; see also Van der Zaag, Juizo, Vilanculos, Bolding, & Post Uiterweer, 2010).

Learning from the enforcement of permits in informal settings in Latin America, Boelens and Zwarteveen (2005) observed: “Individuals who convert their water use into a permit ‘soak water entitlements off’ from collective and community-controlled frameworks.” Indeed, “the individualization of formerly collective rights and management systems has created internal chaos”. Individuals who are encouraged to pursue individual interests at the direct expense of others and the collective as a whole create the tragedy of the commons. Paradoxically, this happens in the name of “neat and orderly” regulation.

The myth that neutral, short-term conversion is feasible and desirable also entails the assumption that conversion is as feasible for small-scale rural users as it is for other users. Every existing water user is assumed to be treated equally in the new regime of permit systems. The same is assumed for permits to take up new water uses. The following section discusses this flawed assumption, first for small-scale users who are obliged to apply for a permit and then for those who are exempted as *de minimis* users.

Structural discrimination in permit systems

Small-scale permit holders

In any administrative system, small-scale water users obliged to apply for a permit face more obstacles than large-scale users in fulfilling the conditions to ensure that their water use is (again) recognized as lawful.

Disproportionate transaction costs

Even though governments simplify the administrative procedures for permits for smaller volumes, the transaction costs to access government services are higher (compared to the benefits from water) for small-scale users than they are for large-scale users. Illiteracy, legal illiteracy, limited mobility in remote rural areas and high transport costs add to the difficulties small-scale users have in reaching government offices. Costs are also disproportionately higher when the applicant has to pay for the transportation and accommodation of government officials who come to check the application, which is the case in Kenya, for example. Also, the poor cannot pay for expensive measurement equipment, as is sometimes required.

Gender

Women face the above-mentioned transaction costs even more strongly. Moreover, as for any administrative measure, there is a tendency to vest titles in households and to assume that men are the heads of households and therefore that permits should be vested in men’s

names. This gender discrimination, well documented in land tenure, is equally present with respect to water (Lastarria-Cornhiel, 1997).

Vulnerability to arbitrariness and corruption

In rural areas with little water infrastructure or water monitoring devices, the aggregate volumes of weather-dependent streams can only be a subjective guess on the part of water officers. This renders permits prone to corruption, as shown by the Water Integrity Network in Chile and Kazakhstan (Water Integrity Network, Stockholm International Water Institute, Swedish Water House, & UNDP Water Governance Facility, 2009).

The poor are more prone to intimidation by a government officer, whether he is genuinely making his best subjective guess or is actually corrupt. This risk of corruption was the main reason for Indian state governments to reject the draft groundwater bill of the Indian National Ministry of Water Resources. This bill had been around since 1970 but had no support for enactment. If there is any region in India that needs regulation it is in Gujarat, where groundwater overdraft is rampant. Yet, the Gujarati chief minister remarked, "Can't you imagine that as soon as this bill becomes a law, every Village Level Revenue Official will have one more means at his disposal to extract bribes from farmers?" (Shah, 2007). Formal large-scale users and their lawyers have access to considerably more evidence, water control and monitoring, and power to challenge arbitrariness.

Lack of government capacity and incentive

The processing of many applications from small-scale users is costly, but adds little to the volumes permitted or the taxes collected. Yet, no country has even estimated such numbers or costs before promulgating the new laws. Assuming that just 5% of rural households are obliged to apply for a permit, there would be fifty thousand applications for each million rural households. Processing so many applications is a major effort. By prioritizing permits for larger users, governments could permit larger volumes at lower transaction costs, which makes even more sense if resources are limited. For example, in South Africa, the largest 10% of users use between 77% (Limpopo Province) and 93% (Gauteng Province) of the total registered volume of water. Efforts to register the remaining 90% of users captures between 7% and 23% of the registered water (Cullis & Van Koppen, 2008).

In sum, permit systems discriminate against small-scale users, especially women. This has similarly been the experience in the land-tenure sector, leading some African states (e.g. Mozambique, Tanzania and Uganda) to no longer require that customary land rights be formally registered (Alden Wily, 2011a).

Those who are exempted

To alleviate logistic burdens, all permit systems include thresholds for small and micro-users who are exempted from the obligation to register or apply for a license. The question is: what is the legal status of exempted water uses? Water lawyer Hodgson (2004) is clear about this "curious type of residuary right".

There is no great theoretical justification for exempting such uses from formal water rights regimes. Instead, a value judgment is made by the legislature that takes account of the

increased administrative and financial burden of including such uses within the formal framework, their relative value to individual users and their overall impact on the water resources balance. . . . While they may be economically important to those who rely on them, it is hard to see how they provide much in the way of security. . . . The problem is that a person who seeks to benefit from such an entitlement cannot lawfully prevent anyone else from also using the resource even if that use affects his own prior use/entitlement. Indeed the question arises as to whether or not they really amount to legal rights at all.

Another government measure to reduce the logistical burdens of small-scale water users is to require them to form a collective and to obtain “collective” permits. Tanzania, for example, has this provision. This relegates small-scale users to discriminatory obligations. The definition of “the collective” is bound to be arbitrary. Intra-group conflicts, male elite capture, and polarization of internal hierarchies and conflicts can occur. Moreover, some group members may still prefer an individual title over a group title and move out at any moment. If water entitlements were to be allocated to collectives, villagers in Tanzania’s Uluguru Mountains preferred vesting permits in local government rather than in irrigation groups. The latter would create chaos, they said (Van Koppen, Tarimo, Sumuni, & Shimiyu, 2013).

Large-scale users

For administration-savvy large-scale users (including foreigners), permits can be a smooth and lawful way to carve out individual first-class entitlements to national waters. The original purpose of colonial rulers, this remains at the heart of today’s water grabs which accompany the surge in land grabs by large-scale investors (Anseeuw et al., 2012; Mehta, Veldwisch, & Franco, 2012). In the lower Limpopo Basin in Mozambique, a foreign company, Procana, started a new sugar-cane plantation in 2007. It swiftly obtained a temporary permit giving it the right to 555 Mm³ per annum, which is more than the total current use (524 Mm³ per annum) of the basin. The government issued this permit without estimating total water resources. The total expansion plans of Procana and other irrigated agro-business amounted to 70,000 ha. Hydrological calculations suggest that water resources are sufficient for only 40,000–45,000 ha of irrigation. Downstream small-scale informal irrigators, including users of wetlands, cultivate an estimated 8000 ha (Van der Zaag et al., 2010). If all plans are realized, the few large-scale users will seriously deprive these small-scale existing users.

To conclude, these water law reforms not only dispossess the majority of small-scale customary water users from their prior entitlements but also force them to adopt a new law that relegates them, by design, to second-class entitlements. At the same time, the first-class entitlements remain as readily available to large-scale users, including foreign investors, as they were before. The tying of entitlements to taxation deepens the discrimination.

Payment for permits as sell-out

The recent wave of water law reform in Sub-Saharan Africa rendered permit systems, which used to carry only nominal fees, primarily a tool for taxation. The proposed improvements in water resource management through the establishment of basin institutions and promoting user-pays principles for “wiser water use” required money. Revenue could be generated by enforcing permit systems with fees tied to the permits. The events in the Rufiji Basin in Tanzania highlight the process. From the end of the 1950s up to

2003, 990 water users had been registered, mainly large-scale users and immigrants. In the early 1990s, the World Bank promoted the revival of the dormant colonial permit system and entrenched fee collection as well. From 1997 onwards, the river basin office charged water fees. They were successful in collecting fees from the few large-scale public–private and private-sector water users, such as the national electricity company and commercial farming estates, who could easily pay thanks to their much larger profits and direct bank access. The office for the entire Rufiji Basin collected USD 50,000 in annual water fees. Overall expenditures of the Rufiji Basin office were estimated at nearly USD 225,000 (Sokile, 2006).

The basin officers also tried to convince smallholders to form water user associations and to apply for permits with their fee-payment obligations. The initial promise was that permits would strengthen their entitlements. A water officer called this the cake he offered with the spear of payments behind his back (Van Koppen et al., 2004). In a domino effect, water user groups followed each other in applying. However, after a couple of years, the legalistic and bureaucratic burdens and the lack of basic hydrological data made the task of the basin officers so difficult that the officers just sent written confirmations that the office had received their application and that a “provisional” permit was granted. This allowed government authorities to charge the annual water fees. This continued although water users paid less to the water office in drier years and kept complaining that the legal status of their formal right remained “provisional” (Mehari, Van Koppen, McCartney, & Lankford, 2009). The water officer defended this by pointing to the clause in the Tanzanian water law (and in permit systems everywhere else) that permits do not render the government responsible for guaranteed water availability. Lastly, those who did pay behaved quite differently from the World Bank’s expectation that payment for water would lead to “wise water use”. When irrigators with permits abstracted water from rivers, they claimed: “I paid for my water right, so I can use as much as I want.” Without any means of controlling water abstraction, the government could do nothing to intervene (Van Koppen et al., 2004).

In Ghana, the Water Resources Commission of 1996 set up a water-use permits database, which is essentially a volume-based billing tool. It can generate invoices and record payments of fees for water use. Twelve years later, in 2008, 154 formal large-scale users had been entered as “permit holders”. They included municipal water service providers, mines, a few large-scale irrigators, and industrial and food processors. In that year, a total of USD 180,000 was collected from these 154 permit holders. This is 40% of the amount invoiced. There is another database for the registration of the millions of other water users, but it has hardly been filled. The legal status of these customary water uses remains contested terrain (Ampomah & Adjei, 2009).

Both countries could have designed a lean taxation tool without the need to change and enforce the entire water-entitlement system. Other countries have done this. The South African government keeps its database and procedures for billing independent from the administration of permits. The database for billing combines the billing system from before the promulgation of the National Water Act with a broader list of users who were obliged to register and to pay the new small water resource management charge after 1998. In 2002–2003 the number of registered users in this database was 68,500. For the financial year 2002–2003, 52,000 invoices were sent to urban companies and utilities and to rural individual users, primarily large-scale farmers. About USD 330 million in water-use charges and water resources management charges was collected (Seetal, Mohapi, & Kavin, 2005). These 52,000 billed users use 80% of the country’s water resources (RSA,

2004). The relatively smaller registered users hardly use any water, so hardly any revenue can be collected. Collection costs would outweigh the revenue collected.

Mexico also applied a lean, independent fiscal measure under the Federal Tax Law implemented by the Ministry of Finance. This was targeted at the relatively few large-scale companies and municipalities in the organized formal water economy. Farmers were exempted. This appeared an effective way to operationalize the “users and polluters pay” principle. The revenue collected by the National Water Commission from 1989 to 1993 rose year by year, with a record high in 1993. In 1993, about 92% of expenditures were covered by charges. However, the National Waters Law of 1992 changed the arrangements and tied taxation to the revived permits. This increased administrative burdens without leading to greater payments. Some people stopped paying once they got their permits (Garduno, 2001, 2005).

Tying permits to water taxation only adds to the government’s administrative burdens, which outweigh revenue collected, compared to a lean targeted taxation tool. It also deepens discrimination. The mixing of tax and entitlement becomes a perverse incentive for governments to grant entitlements to those who use the most water and therefore pay higher taxes. Claiming its status as owner of the nation’s water resources, the government can readily sell those resources. For large-scale users, taxes are only a fraction of the profits they derive from water and they are usually willing to pay. Thus, governments become increasingly financially dependent on large-scale users and their interests. Governments become merchants, selling water as a commodity to those water users that the government can reach most easily and most profitably. Small-scale users are easily excluded, even if they are willing to take all the logistical burdens on themselves and have brought their many small payments to the water office’s doorstep. Exempted users have even less grounds to claim their rights.

Beyond dispossession, discrimination and sell-out

Recognize informal water law

Roman and colonial permit systems have left a deep imprint in Sub-Saharan Africa. It was a step forward when ownership of the nation’s water resources shifted from colonial rulers to the independent states, but only if they do not behave as rent-seeking land- and water-lords with their own interests in mind. Thus, the question is how states, as custodians of the nation’s water resources, can use their power to redress historical injustices.

First, with a stroke of the pen, governments could reverse the pernicious cancellation of indigenous water laws. There are many ways to recognize claims to water as lawful (Burchi, 2005). The restoration of water as a commons is particularly relevant. Another way to vest entitlements is the South African model, which recognizes “existing lawful uses”, although inequities in the apartheid era’s customary rights have still to be addressed. Japanese river law “deems traditional rights as established”, so they are treated as recognized, without requiring procedures and burdens of proof (Sanbongi, 2001). The Chilean water code also recognizes prior existing water uses (Bauer, 2004). As for land tenure, the living laws of the majority of citizens should be taken as the starting point for any legal intervention and be protected against encroachment. The intricate, age-old water-sharing arrangements that are continuously adapted to local conditions need to be understood and nurtured. Five centuries of formal dispossession needs to be redressed.

Prioritize exempted water uses

Once again, with the stroke of the pen, exempted uses could be legally prioritized. This would overcome the discrimination of exempted users' second-class legal status without imposing discriminatory administrative obligations. The entitlement dimensions of permit systems should be used to achieve greater equity. This would protect and encourage the generation of important livelihood benefits for small-scale users. The thresholds should also increase, to a level where administrative discrimination can be avoided.

Revisit the state's regulatory role in the public interest

Third, governments should decouple taxation and water entitlements and stop selling water to those who use the most and therefore pay the most under volume-based fees. Nation-wide elite capture under this collusion of interests should end. Moreover, taxation is more effective as an independent measure that targets the few large-scale users, while ensuring that revenue is used for public interests.

Perhaps the greatest myth of water allocation reforms in Sub-Saharan Africa has been that states first need to change entire water laws before they can regulate. Permit systems were portrayed as the best way to do this and the only way to enable state regulation in the public interest. This may have been true for farming communities around Rome 2500 years ago or in industrialized Europe. However, in Sub-Saharan Africa today, dispossession dominates as the legacy of the other face of permit systems. If governments seek to regulate overuse or pollution by the minority of large-scale users, they make their task more difficult by first giving such users a first-class entitlement, which the latter can use in courts to challenge the government. If state regulators seek to protect most of their citizens, the most straightforward measure is to recognize customary water law and prioritize exempted users. In any case, the more important public interest in Sub-Saharan Africa may lie not in more regulation but in the pro-poor development of its abundant water resources.

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References

- Alden Wily, L. (2011a). The law is to blame: Taking a hard look at the vulnerable status of customary land rights in Africa. *Development and Change*, 42(3), 733–757. doi:10.1111/j.1467-7660.2011.01712.x
- Alden Wily, L. (2011b). *Rights to resources in crisis: Reviewing the fate of customary tenure in Africa*. Washington, DC: Rights and Resources Initiative. Retrieved from http://www.rightsandresources.org/publication_details.php?publicationID=4699
- Ampomah, B., & Adjei, B. (2009). *Statutory and customary water rights governing the development and management of water infrastructure and technologies in the Volta basin* [Unpublished project report]. Accra: Water Resources Commission, International Water Management Institute, Water Research Institute, and Challenge Program on Water and Food.
- Anseeuw, W., Boche, M., Breu, T., Giger, M., Lay, J., Messerli, P., & Nolte, K. (2012). *Transnational land deals for agriculture in the global south. Analytical report based on the land matrix database*. Bern: Centre for Development and Environment, CIRAD/German

- Institute of Global and Area Studies. Retrieved from http://www.oxfam.de/sites/www.oxfam.de/files/20120427_report_land_matrix.pdf
- Bahri, A., Sally, H., Namara, R. E., McCartney, M., Awulachew, S. B., Van Koppen, B., & Van Rooijen, D. (2010). Integrated watershed management: Towards sustainable solutions in Africa. In Rosenberg Water Policy Forum, Marti Smiley Childs, EditPros LLC Marketing Communications.
- Bauer, C. (2004). *Siren song. Chilean water law as a model for international reform*. Washington, DC: Resources for the Future.
- Boelens, R., & Dávila, G. (1998). *Searching for equity. Conceptions of justice and equity in peasant irrigation*. Assen: Van Gorcum.
- Boelens, R., & Zwarteeven, M. (2005). Anomalous water rights and the politics of normalization. Water control and privatization policies in the Andean region. In D. Roth, R. Boelens, & M. Zwarteeven (Eds.), *Liquid relations. Contested water rights and legal complexity* (pp. 97–123). New Brunswick: Rutgers University Press.
- Bolding, A., Post Uiterweer, N. C., & Schippers, J. (2010). The fluid nature of hydraulic property: A case study of Mukudu, Maira and Penha Longa irrigation furrows in the upper Revue River, Manica District, Mozambique. In P. Van der Zaag (Ed.), *What role of law in promoting and protecting the productive uses of water by smallholder farmers?* [Unpublished project report] (pp. 105–136). Delft: UNESCO-IHE, ARASul, Wageningen University and Research Centre, International Water Management Institute, and Challenge Program on Water and Food.
- Burchi, S. (2005, January). The interface between customary and statutory water rights – a statutory perspective. In B. Van Koppen, J. A. Butterworth, & I. Juma (Eds.), *African water laws: Plural legislative frameworks for rural water management in Africa* [Conference proceedings International Water Management Institute, Natural Resource Institute and Faculty of Law University of Dar-es-Salaam, Johannesburg] (pp 32-1, 32-9). Pretoria: International Water Management Institute.
- Caponera, D. A. (1992). *Principles of water law and administration (national and international)*. Rotterdam: Balkema.
- Cullis, J., & Van Koppen, B. (2008). *Applying the Gini coefficient to measure the distribution of water use and benefits of water use in South Africa's provinces* [Unpublished report]. Pretoria: Department of Water Affairs and Forestry and International Water Management Institute.
- Garduno, V. H. (2001). *Water rights administration. Experiences, issues, and guidelines*. FAO Legislative Study 70. Rome: Food and Agricultural Organization of the United Nations.
- Garduno, V. H. (2005). Lessons from implementing water rights in Mexico. In B. Bruns, C. Ringler, & R. Meinzen-Dick (Eds.), *Water rights reform: Lessons for institutional design* (pp. 85–112). Washington, DC: International Food Policy Research Institute.
- Hodgson, S. (2004). *Land and water – the rights interface*. FAO Legislative Study 84. Rome: Food and Agricultural Organization of the United Nations.
- Komakech, C. H. (2013). *Emergence and evolution of endogenous water institutions in an African river basin. Local water governance and state intervention in the Pangani River basin, Tanzania* (PhD thesis). Delft UNESCO-IHE and International Water Management Institute.
- Lastarria-Cornhiel, S. (1997). Impact of privatization on gender and property rights in Africa. *World Development*, 28(8), 1317–1334.
- Manjate, C. (2010). Analysis of water and related laws of Mozambique. In P. Van der Zaag (Ed.), *What role of law in promoting and protecting the productive uses of water by smallholder farmers?* [Unpublished project report] (pp. 17–29). Delft: UNESCO-IHE, ARASul, Wageningen University and Research Centre, International Water Management Institute, and Challenge Program on Water and Food.
- Manzungu, E., & Machiridza, R. (2005). Economic-legal ideology and water management in Zimbabwe: Implications for smallholder agriculture. In B. Van Koppen, J. A. Butterworth, & I. Juma (Eds.), *African Water Laws: Plural legislative frameworks for rural water management in Africa* [Conference proceedings International Water Management Institute, Natural Resource Institute and Faculty of Law University of Dar-es-Salaam, Johannesburg] (pp 22-1, 22-17). Pretoria: International Water Management Institute.
- McAuslan, P. (2005, October–November). *Legal pluralism as a policy option: Is it desirable, is it doable?* Paper presented at the Land Rights for African Development: From Knowledge to Action. Conference Collective Action and Property Rights, UNDP, and International Land

- Coalition. Nairobi. CAPRI Policy Briefs. Retrieved from http://www.capri.cgiar.org/pdf/brief_land.pdf
- Mehari, A., Van Koppen, B., McCartney, M., & Lankford, B. (2009). Unchartered innovation? Local reforms of national formal water management in the Mkoji sub-catchment, Tanzania. *Physics and Chemistry of the Earth*, 34, 299–308. Retrieved from www.elsevier.com/locate/pce
- Mehari, A., Van Steenberghe, F., & Schultz, B. (2007). Water rights and rules, and management in spate irrigation systems in Eritrea, Yemen and Pakistan. In B. Van Koppen, M. Giordano, & J. Butterworth (Eds.), *Community-based water law and water resource management reform in developing countries*. Comprehensive Assessment of Water Management in Agriculture Series 5. Wallingford: CABI.
- Mehta, L., Veldwisch, G. J., & Franco, J. (2012). Introduction to the special issue: Water grabbing? Focus on the (re)appropriation of finite water resources. *Water Alternatives*, 5(2), 193–207.
- Meinzen-Dick, R., & Nkonya, L. (2007). Understanding legal pluralism in water and land rights: Lessons from Africa and Asia. In B. Van Koppen, M. Giordano, & J. Butterworth (Eds.), *Community-based water law and water resource management reform in developing countries* (pp. 12–27). Comprehensive Assessment of Water Management in Agriculture Series 5. Wallingford: CABI.
- Mohamed-Katerere, J., & Van der Zaag, P. (2003). Untying the “Knot of Silence”; making water policy and law responsive to local normative systems. In F. A. Hassan, M. Reuss, J. Trotter, C. Bernhardt, A. T. Wolf, J. Mohamed-Katerere, & P. Van der Zaag (Eds.), *History and future of shared water resources*. IHP Technical Documents in Hydrology – PCCP Series No. 6. Paris: UNESCO.
- Ramazotti, M. (1996). *Readings in African customary water law*. FAO Legislative Study 58. Rome: Food and Agricultural Organization of the United Nations.
- Republic of South Africa (1998). *National Water Act*. Government Gazette Vol. 398. 26 August 1998. Cape Town: Office of the President.
- Republic of South Africa (2004). *National water resources strategy* (1st ed.). Pretoria: Department of Water Affairs and Forestry. Retrieved from <http://www.wrc.org.za/Knowledge%20Hub%20Documents/Other/NWRA%20Sept04.pdf>. Republic of South Africa
- Sanbongi, K. (2001). Formation of case law and principles in watershed management. In S. Bogdanovic (Ed.), *Proceedings of the Regional Conference on the legal aspects of sustainable water resources management* (pp. 121–127). Novi Sad: International Association for Water Law.
- Sarpong, G. A. (n.d.). Customary water law and practices: Ghana. Retrieved from www.iucn.org/themes/law/pdffdocuments/LN190805_Ghana.pdf
- Seetal, A., Mohapi, N., & Kavin, H. (2005). *Current challenges of water use authorization management in South Africa*. Unpublished manuscript.
- Shah, T. (2007). Issues in reforming informal water economies of low-income countries: Examples from India and elsewhere. In B. Van Koppen, M. Giordano, & J. Butterworth (Eds.), *Community-based water law and water resource management reform in developing countries* (pp. 65–95). Comprehensive Assessment of Water Management in Agriculture Series 5. Wallingford: CABI.
- Sokile, C. (2006). *Analysis of institutional frameworks for local water governance in the upper Ruaha catchment*. Unpublished PhD thesis. Dar-es-Salaam: University of Dar-es-Salaam.
- Van der Zaag, P., Juizo, D., Vilanculos, A., Bolding, A., & Post Uiterweer, N. (2010). Does the Limpopo river basin have sufficient water for massive irrigation development in the plains of Mozambique? In P. Van der Zaag (Ed.), *What role of law in promoting and protecting the productive uses of water by smallholder farmers?* [Unpublished project report] (pp. 41–49). Delft: UNESCO-IHE, ARASul, Wageningen University and Research Centre, International Water Management Institute, and Challenge Program on Water and Food.
- Van Koppen, B. (2007). Dispossession at the interface of community-based water law and permit systems. In B. Van Koppen, M. Giordano, & J. Butterworth (Eds.), *Community-based water law and water resource management reform in developing countries* (pp. 46–64). Wallingford: CABI.
- Van Koppen, B., Giordano, M., & Butterworth, J. (Eds.) (2007). *Community-based water law and water resource management reform in developing countries*. Comprehensive Assessment of Water Management in Agriculture Series 5. Wallingford: CABI.

- Van Koppen, B., Sokile, S., Hatibu, N., Lankford, B., Mahoo, H., & Yanda, P. (2004). *Formal water rights in Tanzania: Deepening a dichotomy?* IWMI Working Paper 71. Colombo: International Water Management Institute.
- Van Koppen, B., Tarimo, A., Sumuni, P., & Shimiyu, K. (2013). *Report Uluguru mountains field study 31 May 3–June 2013*. Unpublished manuscript.
- Von Benda-Beckmann, F., Von Benda-Beckmann, K., & Spiertz, J. (1998). Equity and legal pluralism: Taking customary law into account in natural resource policies. In R. Boelens, & G. Dávila (Eds.) *Searching for equity. Conceptions of justice and equity in peasant irrigation* (pp. 57–69). Assen: Van Gorcum.
- Water Integrity Network, Stockholm International Water Institute, Swedish Water House, and UNDP Water Governance Facility (2009). *Corruption risks in water licensing. With case studies from Chile and Kazakhstan*. Report 27. Stockholm: Swedish Water House, Stockholm International Water Institute.

Appendix. Legislative references

- Mozambique, Ley de Agua 1991, <http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwemoz.htm>
- License and Concession Regulations Decree, No. 43/2007, http://www.dnaguas.gov.mz/?__target__=legislacao
- Uganda Water Act, 1997. http://www.mwe.go.ug/index.php?option=com_docman&task=cat_view&gid=7&Itemid=223
- Zimbabwe, Water Acts No. 31/1998, 22/2001, 13/2002, 14/2002. Chapter 20:24. http://www.parlzim.gov.zw/attachments/article/106/WATER_ACT_20_24.pdf
- Burkina Faso, Loi d'orientation relative à la gestion de l'eau 2001, http://documentation.2ie-edu.org/cdi2ie/opac_css/doc_num.php?explnum_id=46
- Swaziland, Water Act 2003. <http://faolex.fao.org/docs/texts/swa45031.doc>
- Kenya, Water Act 2002, currently being revised, <http://faolex.fao.org/docs/pdf/ken37553-a.pdf>
- Tanzania, 2009 Water Resource Management Act, No. 11, <http://faolex.fao.org/docs/pdf/tan96340.pdf>
- Zambia, Water Resources Management Act, No. 21 of 2011, <http://faolex.fao.org/docs/pdf/zam117433.pdf>
- Ghana, Water Resources Commission Act 1996, http://doc.wrc-gh.org/pdf/wrc_4014e_2012027_1330330600.pdf
- South Africa, National Water Act 1998, <http://www.info.gov.za/view/DownloadFileAction?id=70693>