

Article

# Hybrid Water Rights Systems for Pro-Poor Water Governance in Africa

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**Abstract:** Water-permit systems are widely used across Africa as a blanket requirement for small and micro irrigation enterprises, as well as large enterprises. The present study aimed to, first, further understand the implications of permit systems for both the most vulnerable and the state, and, second, based on the findings, identify options for pro-poor water legislation that also meet the water governance requirements of the state. The growing recognition of the importance of farmer-led irrigation development for food security across the continent underlines the importance of these questions. Focusing on Kenya, Malawi, South Africa, Uganda, Zimbabwe, and other African countries, we found that permit systems criminalized instead of protected the water rights of small-scale farmers. Moreover, little if any attention is paid to the logistical burdens and costs to the state of implementing such systems relative to the intended revenue generation. As many small-scale farmers in Africa were found to operate under customary land and water tenure systems, the study proposes a hybrid system of water rights that formally recognizes such practices, along with the use of permits, including enforcement of conditions for large users, to serve the interests of both the state and small-scale farmers.

**Keywords:** water law; permits; customary; legal pluralism; hybrid water rights; irrigation; Africa

## 1. Introduction

Global discourse on Integrated Water Resource Management since the 1990s has promoted water-permit systems as an important element of effective water regulation. According to FAOLEX [1], four-fifths of the countries in Sub-Saharan Africa, the focus of this article, have permit systems. Permit systems were expected to be the best available legal system across the world for governments, as custodians of water resources, to govern water in a public interest. This includes cost-effectively and sustainably contributing to national development goals, meeting international agreements, safeguarding water quality, or settling conflicts under growing competition of water resources.

At the same time as such permit systems have been widely adopted, there has been a significant rise in farmer-led irrigation development (FLID)—a process that has been recognized as vital for improving food security and agriculture-led economic growth in Africa [2–4]. On-farm self-employment and employment are key to the livelihoods of the most vulnerable and those left behind. While their domestic water and sanitation needs rightfully receive global attention, water is equally important for their food, nutrition, and income, as enabled in FLID.

However, in spite of the call in the same IWRM discourse for integration to overcome the silos of public administration by governments and national and international nongovernmental organizations,

donors, financiers, and users' organizations, the promotion of permit systems and support to FLID continue to take place in parallel. The study presented in this article seeks to bridge this gap.

## 2. Materials and Methods

The study conducted was entitled "Water Law Reform to Improve Water Security for Vulnerable People in Africa". It was supported by the REACH Program of Oxford University, which, at its turn, was supported by the Department for International Development of the United Kingdom (DFID). It was implemented by Pegasys Institute and the International Water Management Institute, in collaboration with senior water authorities and researchers from Kenya, Malawi, South Africa, Uganda, and Zimbabwe, as well as international organizations.

The study aimed at, first, further understanding the implications of permit systems for both the most vulnerable and the state, and, second, based on the findings, identifying options for pro-poor water legislation that also meets the water-governance requirements of the state.

The study examined the following sub-questions:

- What are the current implementation challenges of permit systems in Kenya, Malawi, Uganda, South Africa, and Zimbabwe?
- What are the implications of these challenges for both the water security of small-scale water users and state revenue generation?
- How can the findings be explained in terms of historical colonial events, and how can those causes be addressed?
- Can a hybrid water-use-rights system be designed for these five and other African countries that is appropriate to the cultural and capacity context of Africa and that will protect the rights of small-scale water users, while offering effective regulation of water use by the state to support national development goals and the generation of revenue from water use?

The research method involved primary research on the implementation status of permitting and billing in Kenya, Malawi, South Africa, Uganda, and Zimbabwe; an extensive national and Africa-wide literature review of formal and customary water laws; presentations and debates during two workshops with in-country researchers and senior government officials of these five countries; the synthesis of emerging recommendations into a practical guide for water managers on a hybrid water rights system; debates on these findings and recommendations in further policy dialogue with senior decision-makers, including from other African countries, and, during the Africa Water Week 2018 with African governments, development banks, donors, INGOs, and water lawyers; and at the 2019 Stockholm World Water Week. The following sections present the findings of the study.

## 3. Results

### 3.1. Implementation Status of Permit Systems

Primary research of government files in the five countries showed a significant inability of the state to implement water-permit systems. In the absence of quantitative data on small-scale water uses, which are typically informal, it is assumed that 5% of rural households are participating in small-scale income-generating irrigation and therefore require water permits. As Table 1 below shows, the number of permits issued relative to the estimated number of water users that should have permits is extremely low in all countries.

The implication of obliging all users to obtain a permit is that those without a permit are using water illegally: they commit criminal offences, according to the law. However, given the administrative burdens, the governments studied are unable to process hundreds of thousands of permits.

In two countries, the administrative requirements are different, but with opposite implications for small-scale users. In South Africa, nationwide permits were introduced in the National Water Act of 1998 (and are termed water-use licenses). However, in the previously 'white' areas, most high-impact

water users have registered their existing water uses, which they continue to use under so-called Existing Lawful Use (ELU). This clause was originally intended to allow for the transition of all water use to licenses and redress inequities of the past, but 20 years after the promulgation of the Act, most water use is still taking place under the ELU clause. This entrenched the racial privileges vis-à-vis all historically disadvantaged individuals, who were denied any formal water right before 1998 but are now supposed to obtain licenses for pre- and post-1998 water uses.

**Table 1.** Number of permits issued (2016) relative to the estimated number of small-scale users requiring permits based on an assumption of 5% of rural households requiring permits.

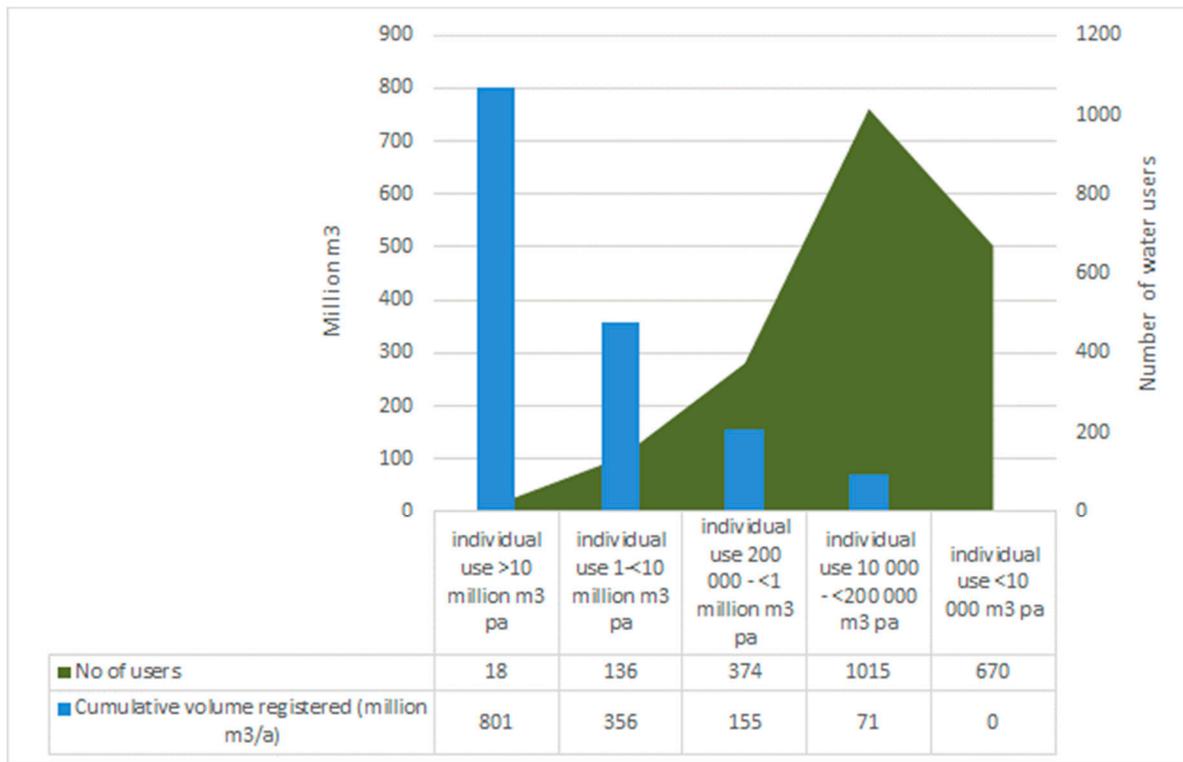
Country	Permits Issued (2016)	5% of Rural Households	Total Rural Households
Kenya	4194	302,342	6,046,833
Malawi	3042	128,650	2,573,000
South Africa	5956	160,650	3,213,000
Uganda	1320	274,633	5,492,667
Zimbabwe	10,799	93,500	1,870,000

In addition to the water-use-license requirements, the South African legislation allows for water use under general authorization. Such water use does not require a license (but may require registration and payment). It may be restricted to a particular water resource, a particular category of persons, a defined geographical area, or a period of time. While this is a tool that was intended to reduce the administrative burdens on both the state and small-scale users, implementation of the tool has been overly restrictive, rather than enabling and supportive of small-scale water users.

In contrast, in Kenya, the administrative requirements are proportionate to the significance of the water use. This mitigates the categorical criminalization of small-scale users resulting from insufficient state capacity to process permits. Small-scale users who fall under Category A do not require a permit, but they are obliged to submit an application to the state. If the state ascertains that the water use does, indeed, fall into Category A, an approval is issued. Category A approvals do not have to be renewed, unlike permits, which must be renewed at regular intervals. This reduces the burden on both the state and the small-scale users. In addition, Category A water users are not expected to pay water-use charges. Applications in the A and B categories are determined by the Water Resource Authority Regional Offices. Category C users have a more significant impact on the resource and are approved by both the Regional Offices and the Catchment Area Advisory Committees (CAACs). Category D uses involve either international water, two different catchment areas, or is of a large scale or complexity and has a measurable impact on the water resource. Permit applications are determined by Regional Offices, CAACs, and approval by WRA Headquarters [5].

The importance of adjusting administrative requirements to the relative impact is underlined by a quantitative analysis of the distribution of water in these two countries. The number of large-scale, high-impact water users is relatively small, in contrast to a large number of small-scale water users. An assessment of water use in the Inkomati Catchment in South Africa (see Figure 1) shows the handful of water users who are responsible for around 90% of registered water use in the catchment, while the remaining 10% of water use is spread over thousands of registered water users.

Similarly, in Kenya, 4046 surface and groundwater permits for the categories B, C, and D had been issued by June 2015. The 251 D permits constitute 6% of the number of permit holders, but 98% of the total volume of water used under category B, C, and D permits [6]. Adjustments to administrative requirements that are proportionate to scale of water use are even more important for governments' volume-based revenue generation, as discussed next.



**Figure 1.** Number of users and volume of registered water use in the Inkomati–Usuthu Water Management Area, South Africa.

3.2. Cost Effectiveness of Billing Small-Scale Irrigators

Revenue generation for water resource management is one of the expected advantages of permit systems. However, the study’s question about the cost effectiveness to the state of billing of small-scale irrigators appeared to be the first time that this question was raised. The costs to the state (and to small-scale users) of implementing water-use charges for large numbers of small-scale users spread across a large terrain had never been conceptualized as a business process. The project’s business process maps (with Microsoft Visio software) were the first of their kind. They were created through an iterative process of consultation with officials in the water authorities. Costs of billing included—conservatively estimated—staff time spent on each step of the billing process, converted into financial cost, and transport costs (fuel and vehicle). Other costs, such as computers, office rental, stationery, etc., were not calculated. The Supplementary Material shows an example of the business process map (for Uganda).

In Kenya and Uganda, sufficient information was found within the limited scope of the research, to develop business process maps. What the business process maps showed was that, in Kenya, there are considerable inefficiencies that drive up the costs to the state. For example, some bills are still delivered by hand, adding to both costs and the administrative burdens on understaffed offices in remote areas. This is exacerbated by poor internet connectivity, which means, for example, that access to the Permit Database system for uploading by officials can take up to 30 minutes. Invoices are supposed to be generated automatically through the Permit Database, but, in reality, a substantial amount of manual input is required to process payments and invoices. In addition, the requirement that water users submit their own meter readings is not adhered to. Internet access is not always reliable; online self-assessment forms are not readily available to users; and physical delivery of the self-assessment form is extremely time-consuming for water users. To address this, the Water Resources Authority teams have to drive to these areas to obtain meter readings and deliver invoices, receipts, and reminders. Thus, the amount of time spent billing and invoicing users is up to seven times that of

an ideal process on paper. Although more research is needed for a complete cost–benefit calculation in practice, initial results indicate that, in Kenya, the costs to the state are higher than revenue generated. There are also disproportionate costs to remote small-scale users.

The business process maps revealed greater efficiencies and, therefore, lower administrative costs in the Ugandan system. In Uganda, the billing system is tied to the tax system, and water-use charges are paid through the Ugandan Revenue Authority. This is more efficient for the state in terms of actual costs incurred. Moreover, payment rates of the few permit holders are high due to the control over unpaid bills by the national tax authority. However, remote rural users must travel to urban centers in order to pay bills, so that costs can be high for the more remote, smaller users, in particular.

In sum, in their current application, permits systems in the countries studied do the following:

- Fail to protect, and, in many cases, criminalize, the water use of small-scale farmers who are at the core of farmer-led irrigation development;
- Are extremely resource intensive, and therefore cannot easily be implemented by resource-constrained water authorities, particularly where there are large numbers of small-scale users scattered across a large geographical area poorly served with roads and internet connections;
- Fail to bring in the expected net revenue, at least in part due to these reasons.

This raises the question of how these five countries, and other African countries, ended up with such inappropriate legislation, and how such causes can be addressed. We briefly highlight one of the causes found in the study: the colonial legacy of permit systems.

### 3.3. The Colonial Legacy

The extensive literature review of colonial and current water law in the five countries indicates a strong legacy carried through from the colonial period into postcolonial water law [7]. Kenya's 1929 Water Ordinance issued by the Colony and Protectorate of Kenya was the first fully fledged permit system of these five countries. Customary African water law was initially recognized but relegated to a secondary status. In Zimbabwe, the wording between the two periods are consistent. For example, Zimbabwe's Water Act of 1998 (Section 48) only changed the names into the renamed institutions compared to Section 105 of Rhodesia's 1927 Act (as in italics):

- 1998: The Minister shall "have due regard to the interests of occupants of Communal Land" (1927: Governor shall "have due regard to the interests of the occupants of the Native Reserves").
- 1998: The Minister may nominate "any fit person to represent the interests of the occupants of any Communal land before the catchment council" (1927: *The Governor may appoint "any fit person whom he may select to represent the interests of the occupants of any Native Reserve" to Irrigation Board or River Board, or Water Court hearing*).

The water-permit systems in colonial Kenya, Malawi, and Zimbabwe vested ownership of water resources in the overseas rulers and introduced permits for the small minority of white settlers, as their strong entitlements to water, protected by the colonial state. In Uganda, and, to some extent, South Africa, water-rights regimes were more tied to colonial land tenure, but serving the same goal.

After independence, the state became the custodian of water resources, and the colonial system of water permits was simply extended to the entire growing population. This extension of permits to all water users and the nationwide adoption of permits in South Africa and Uganda were further entrenched in the IWRM-based water reform programs of the 1990s. In South Africa, for example, prior to the 1998 National Water Act, the only permits for water use had been for waste discharge and commercial afforestation stream flow reductions. Clearly, a system designed, historically, to benefit a minority of users at the expense of African water users cannot serve contemporary national goals. What alternative legislative framework might better serve those goals?

#### 4. Discussion: Hybrid Water-Rights Systems and Recognition of Customary Water Law

Building on the findings of this research and policy dialogue, and looking at other African countries, the project partners identified a hybrid approach to water legislation to overcome the flaws found [8]. This approach includes a suite of tools for selective use and adjustment to local situations to serve the interests of both the state (in effective water regulation to serve national goals) and small-scale users (in having well-protected legal rights to water). These tools are to be applied selectively and differentially within an adaptive management approach that responds to specific water-resource challenges on the ground, enabling effective and fair regulation of water use.

These tools include the following:

1. Targeting of permits to the relatively small number of large-scale high-impact water users, with strict permit conditions that can be effectively enforced. In the wordings of Hodgson [9], this means moving away from permits as longer-term rights capable of being asserted against the state and third parties to short-term regulatory licenses.
2. Exemptions with realistic thresholds, for example, as general authorizations, ensuring equal legal standing to permits.
3. Collective permits, where appropriate and where inclusive users' organization exists.
4. Prioritization of water use that is more refined than current ranking of single-use sectors.
5. Statutory recognition of customary water law, within constitutional imperatives.

The last tool has received least attention till today. Unlike the wide recognition of legal pluralism in land tenure, the attention for customary water law has been limited in Africa [10,11], Customary water law is well recognized in Latin America [12] or even in the USA, Australia, and New Zealand [13], where the proportions of populations adhering to customary water law are much smaller than in Africa. However, a Sub-Saharan Africa-wide literature review of some 60 case studies and overviews [10] revealed how customary water-law practices are still active and strongly linked to customary land tenure.

The literature showed how customary negotiations and their outcomes vary from locale to locale and are shaped by similar common allocation grounds or principles, as found in Latin America [14]. Throughout Sub-Saharan Africa, three consistently recurring principles are typical for water: water is a shared resource, socio-territorial claims, and infrastructure investors' claims. The last two principles are shaped by three other, more general principles: taken by force, first-come-first-served, and transfers. These principles are briefly outlined below.

**A shared resource given by God:** Water is considered to have been given by a higher force for all living beings, and this philosophy underpins its allocation and use as a shared resource. Private ownership, or ownership by the state, for that matter, is an alien notion.

**Socio-territorial claims:** Water rights derive from the occupation of land and the related water resources below, falling on or flowing over such land. However, as water flows and is shared, downstream impacts of this shared resource are to be considered.

**Investments in infrastructure or hydraulic property rights creation:** Investing in water infrastructure that stores water or channels water over long distances vests claims to the water conveyed or stored as a result [15]. This principle is important in that it provides the security that motivates investment in and maintenance of infrastructure.

**Taken by force:** Water (and land or other resources) can be taken by force in many ways, including through colonial conquest, forced removals, civil strife, or intimidation and information control by powerful national and international state and nonstate actors.

**First-come-first-served:** As for any natural resource, first access and use of water legitimizes claims. In Sub-Saharan Africa, these rights are legitimized by referring to ancestral use, and claims are transferred down through generations.

**Transfers:** In rural societies, transfer of land and water rights are a key element of marriage, kinship, and matrilineal or patrilineal or bilateral inheritance of land with its related water resources. Other transfers include exchange, rent, or sale.

The negotiated outcome of this mix of principles varies depending on local conditions. Obviously, the identification of broad principles is only a first step in understanding living customary normative frameworks. More research is warranted to further corroborate this legitimate alternative to blanket administrative permits and precious basis for conflict resolution

## 5. Conclusions

This study revealed how water-permit systems have created significant challenges for millions of small-scale irrigators across Sub-Saharan Africa: poorly designed permit systems combined with lack of implementation capacity in the state have left small-scale water users, at best, without legal protection for their water use, and, at worst, criminalized. Historically, permit systems legitimized colonial water grabs and delegitimized the water use of Africans. The expansion of permit systems to cover all water resources and users, including small-scale farmers, continued this exclusion by insufficient consideration of either the resources required to administer water permits for large numbers of small-scale water users, or the ongoing customary water-use practices in these countries. While many countries have formally recognized customary land tenure rights, the same is not the case for water rights.

As a result, resource scarcity has prevented states from administering permits across large numbers of small-scale users, who either do not know about the requirements for permits or have little incentive to apply. Thus, while the water use of larger scale, administratively competent water users is legitimized and regulated through permits, the water use of small-scale farmers is rendered illegal. Lack of enforcement means states take little action to address this illegality, but, in the face of competition, small-scale users have no legal protection for their water use. Permit systems, as is increasingly being recognized, enhance, rather than reduce, the water insecurity of small-scale water users. The study also highlighted, for the first time, the hitherto ignored administrative costs to the state of collecting revenue from a large number of small users. They easily outweigh revenue.

A practical pathway toward pro-poor water governance is a hybrid water-use-right system. Five complementary tools are identified that can be combined, rather than the blanket application of permits to all water users. This would result in a system appropriate to the African context. It would support sustainable and productive water use in line with national development goals and within ecologically sustainable limits, while also providing legal protection for small-scale water users, to support rural development and the growth of small-scale agriculture for poverty eradication and improved food security. Targeted permits would strongly regulate and control the water abstraction and uses of high-impact users, while making optimal use of limited state resources in water management. It would also be administratively fair. Fairness does not imply a one-size-fits-all water-rights regime—a differentiated system is required to ensure administrative fairness in the context of significant economic inequalities. Finally, such an approach would make optimal use of polycentric and multilevel governance.

**Supplementary Materials:** The following are available online at <http://www.mdpi.com/2073-4441/12/1/155/s1>, Billing Process Map Uganda.

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