

ESTABLISHING HYBRID WATER USE RIGHTS SYSTEMS IN SUB-SAHARAN AFRICA

A practical guide for managers



 PEGASYS
INSTITUTE

 IWMI
International
Water Management
Institute

REACH
Improving water security for the poor

 UKaid
from the British people

Barbara Schreiner, Barbara van Koppen



Rural homestead, Uganda (pic. Barbara Schreiner)



Drip irrigated vegetables, South Africa (pic. Barbara Schreiner)

ACKNOWLEDGMENTS

This report derives from the Water law reform to improve water security for vulnerable people in Africa project conducted by the Pegasys Institute and the International Water Management Institute (IWMI) with the participation of senior government officials and researchers from Malawi, Uganda, Zimbabwe, Kenya and South Africa, and contributions from the Fair Water Futures project and the Environmental Law Institute. The authors gratefully acknowledge their inputs and fruitful debates. The South African component of the project also benefitted from the dialogues with the country's Department of Agriculture, Forestry and Fisheries (DAFF).

Our thanks are due to: REACH Oxford for the funding provided to support the research behind this handbook, and the drafting of the handbook; the Rockefeller Foundation for providing a practitioner residency to Barbara Schreiner in Bellagio to draft this handbook; and Jessica Troell and Willie Enright for reviewing and considerably improving the handbook.

The project was funded through an Accelerated Grant under the Oxford University REACH Program, supported by UK Aid from the UK Department for International Development (DFID) for the benefit of developing countries (Aries Code 201880). The views expressed and information contained in this Guideline are not necessarily those of or endorsed by DFID, which can accept no responsibility for such views or information or for any reliance placed on them.

About the Authors

Barbara Schreiner is Executive Director of the Pegasys Institute. She has over 20 years of experience in the water sector in Sub-Saharan Africa, at senior level in government and in research and consulting. She has written extensively on issues of water governance in Africa, with a focus on poverty eradication, gender and social inclusion. Dr Barbara van Koppen (Ph.D.) is Principal Researcher in Poverty, Gender and Water at the International Water Management Institute. She has over 30 years of experience in action research on water services for multiple uses to poor women and men, and plural water law in Africa, Asia and Latin America. She has written more than 120 international publications.

© Pegasys Institute and IWMI, 2018

ISBN: This publication may be reproduced in whole or in part and in any form for educational or non-profit services without special permission from the copyright holder, provided acknowledgement of the source is made. The Pegasys Institute and IWMI would appreciate receiving a copy of any publication that uses this publication as a source. No use of this publication may be made for resale or any other commercial purpose whatsoever without prior permission in writing from the Pegasys Institute. The use of information from this publication concerning proprietary products for publicity or advertising is not permitted.

Cover photograph: Barbara van Koppen. Smallholder rainfed and irrigated agriculture Uluguru Mountains Tanzania

CONTENT

List of Acronyms	6
Why should you read this guideline?	7
Section A: Setting the context	8
1 Introduction: creating vibrant and economically productive rural communities	8
2 Purpose of this guideline	10
3 Ten characteristics of an effective and pro-poor water use rights system	12
4 The skewed nature of water use in Africa	15
5 Key messages	19
6 Current water use authorisation systems in Sub-Saharan Africa: challenges and opportunities	20
6.1 Water use permit systems: designed to fail	20
6.2 Permit systems as a regulatory tool	21
6.3 Permit systems as a mechanism for revenue generation	23
6.4 Disproportionate impact on smallholder farmers	24
6.5 Permits as evidence	25
Section B: Designing and implementing an effective water use rights system	26
7 Filling the toolbox	26
7.1 Designing a hybrid water use rights system	27
7.2 Reducing 'red tape'	27
7.3 Water use permits	28
7.3.1 Renewal of permits	28
7.3.2 Compliance monitoring and enforcement	29
7.3.3 Benefits/limitations	29
7.3.4 Practical recommendations	29
7.4 Harnessing customary law	30
7.4.1 Benefits/limitations	31
7.4.2 Practical recommendations	31
7.5 Prioritisation of water use	31
7.5.1 Benefits/limitations	32
7.5.2 Practical recommendations	32
7.6 Exemptions with a raised threshold	32
7.6.1 Raising the volume allocated under priority use	33
7.6.2 Category A permission: The Kenyan example	33
7.6.3 General Authorisations: The South African example	33
7.6.4 Prioritisation of exempted water use	33
7.6.5 Benefits/limitations	34
7.6.6 Practical recommendations	34
7.7 Collective permits	34
7.7.1 Benefits/limitations	34
7.7.2 Practical recommendations	34
8 Selecting the right tools	35
8.1 Decision tree	36
8.1.1 Preparation	36
8.1.2 Legislative Amendments	38
8.2 Capacity building, communication and change management	39
9 Revenue generation through a hybrid system	40
9.1. Practical recommendations	41
10 Conclusion	42
11 References	44

List of figures

Figure 1: Number of users and volume of registered water use across 5 categories of water use in the Inkomati-Usuthu Water Management Area (based on WARMS data, DWS, 2017)	16
Figure 2: % of water used by 30 largest permit holders vs remaining 930 in WamiRuvu (from Sumini 2016)	17
Figure 3: Proposed targeted approach to regulating and supporting water use	17
Figure 4: Indicative graph of break-even point on billing and revenue collection	23

List of tables

Table 1: Status of water permitting in five countries in Sub-Saharan Africa in 2016	22
Table 2: Water use charges in Uganda per category of water use	25
Table 3: Benefits of different water use rights tools	36



Cleaning furrows Uluguru Mountains Tanzania (pic Barbara van Koppen)



Subsistence farmer drawing water from a canal (pic. Susan Byakika)

LIST OF ACRONYMS

AGRA:	Alliance for a Green Revolution in Africa
CAAC:	Catchment Area Advisory Committee
CME:	Compliance, Monitoring and Enforcement
DWA:	Department of Water Affairs
DWS:	Department of Water and Sanitation
FAO:	Food and Agriculture Organisation
FLID:	Farmer-Led Irrigation Development
IFAD:	International Fund for Agricultural Development
IFPRI:	International Food Policy Research Institute
NGO:	Non-Governmental Organisation
NPO:	Non-Profit Organisation
SDG:	Sustainable Development Goal
SSA:	Sub-Saharan Africa
UGX:	Uganda Shilling (Currency)
USD:	United States Dollar
WARMS:	Water Authorisation and Registration Management System
WHO:	World Health Organisation
WRMA:	Water Resource Management Authority
WULAAC:	Water Use Licensing and Authorisation Advisory Committee
WUO:	Water User Organisation



Farmer-led irrigation in the Uluguru Mountains Tanzania (pic. Barbara van Koppen)

WHY SHOULD YOU READ THIS GUIDELINE?

Ask yourself the following questions:

Do we have the capacity (financial, human and information) in government to ensure that everyone who is legally required to have a water permit is issued with one in the next 5 years (including the large number of small-scale users in the rural areas)?

Do we have the capacity (financial, human, technical and/or information) in government, to ensure compliance with all of those permits?

If yes: That's excellent, close this book and go ahead with what you have been doing.

If no: Then read this book and see how a hybrid water use rights system can help make the job of water managers easier and more effective, and how you can get a better outcome, even with limited state resources.



SECTION A: SETTING THE CONTEXT

Shire River Malawi (pic. Barbara Schreiner)

INTRODUCTION:

creating vibrant and economically
productive rural communities

Despite progress against poverty in recent decades, in most regions of the world, rural poverty remains a challenge, with rural communities facing ongoing social, economic and political marginalization. Small farms across sub-Saharan Africa (SSA) account for up to 80 per cent of the food produced on the continent (IFAD 2015). Yet these farmers, particularly female farmers, face ongoing challenges in accessing technology, finance, knowledge, resources (including water for irrigation) and markets (IFAD 2016). Sub-Saharan Africa remains the area with the highest levels of persistent rural poverty. Despite rapid economic growth and substantial increases in agricultural productivity over the past twenty years, extreme hunger and malnutrition remain a significant challenge.

According to the World Health Organisation (WHO), although the percentage of stunting and impaired growth of children in Africa has been reduced over the past 20 years, the absolute numbers are increasing: from 50.4 million in 2000 to 58.5 million in 2016. Twenty-five of the 47 countries reported on have high (>30%) or very high (>40%) rates of stunting (WHO 2017).

Sustainable Development Goal 2 sets out the target:

By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons.

To achieve this target in Africa will require substantial action on the part of government, both in terms of direct investment in development programmes, including infrastructure, and through the creation of an enabling environment for people to meet their own food security and nutrition needs. To create such an enabling environment will, in turn, require the effective promotion of sustainable and appropriate agricultural practices and provision of meaningful support to small-scale farmers so they can better access land, technology, markets and water. It is this last issue, access to water in the context of meeting food security and nutrition needs, and creating vibrant and economically active rural communities, that is the subject of this guideline.

Smallholder farmers constitute approximately 70% of the population of Africa and form by far the largest private sector constituency in African agriculture. These farmers are up to eight times as effective in creating jobs as their large commercial counterparts, largely due to lower mechanisation and greater use of human labour (AGRA 2017). On average, the internal rate of return of investment in small-scale irrigation projects is in the region of 26% while it is 7-17% on large-scale irrigation projects in Sub-Saharan Africa (see World Bank 2008 and IFPRI 2010). Providing support to these farmers to enable them to develop profitable rural businesses that generate a surplus thus makes good business sense and provides a way of meeting the SDGs on hunger, reduced inequalities and responsible production.

In recent years, a substantial increase in farmer-led irrigation development (FLID) has taken place across the

continent driven largely by the increasing availability of affordable pumps. FLID is the result of small-scale farmers investing in their own infrastructure for irrigated agriculture in order to produce crops largely for the market. Although extensive and increasing, FLID still largely unreported in official statistics.

Despite evidence of the substantial labour and capital investments that farmers make in developing irrigation systems at the household or community level (Woodhouse, et al., 2017), since many of these activities are informal, they are often missed in national statistics on irrigation expansion. Thus, for example, a study in Mozambique in 2014 suggested that an equal amount of undocumented FLID existed in parallel with the officially recognised irrigation area (Beekman et al 2014). A similar picture emerges from Tanzania, and in the Limpopo province of South Africa, around 70 000 ha of undocumented FLID was identified in 2017 (Van Koppen et al 2017).

The agricultural sector in Africa faces a policy choice in relation to whether it will follow an inclusive development path. Such a path would see the linking of smallholder farmers to high value markets and downstream processing opportunities and would add value and employment along the value chain for small and medium enterprises (AGRA 2017). Inclusive rural transformation is a critical element of broader inclusive growth and sustainable development (IFAD 2016). The decision to support an inclusive and pro-poor approach requires countries to make specific policy choices and implement appropriate actions to support an inclusive path to enables smallholder farmers to seize relevant opportunities, including access to and protection of irrigation water rights.

The expansion of FLID across the continent, and the potential it brings for creating vibrant and empowered rural communities also begs the critical question of the appropriate response from the water sector. There are also other livelihoods options, as well as cultural uses of water, that need to be protected. While these are not the focus of this guideline, the hybrid water use approach would cover all small-scale water uses.

A key question that both water managers and those driving rural development agendas must ask themselves is what can be done to stimulate and support inclusive rural transformation through adapting and improving water use authorisation systems? (IFAD 2016)



Farmers mapping their furrows in the Uluguru Mountains Tanzania (pic. Barbara van Koppen)



SECTION A: SETTING THE CONTEXT

Farmer-led irrigation in the Uluguru Mountains Tanzania
(pic. Barbara van Koppen)



PURPOSE of this guideline

There are significant challenges facing water users in Africa, including increasing competition over limited resources, under-developed storage and distribution infrastructure, and the unpredictable impacts of climate change. Climate change is bringing increasingly hot weather to the continent, as well as changing rainfall and run-off regimes (Serdeczny et al 2016). These challenges are particularly pertinent for rainfed agriculture and are driving the need for expanded irrigation to improve reliable agricultural productivity across the continent. At the same time, population growth, increasing urbanization, improved economic status of many, and changes in diet are all driving the global demand for food, which is expected to increase by over 60 per cent by 2050 (IFAD 2016). This demands a major increase in agricultural productivity, with attendant increasing demands for water for irrigation.

Irrigation is significantly under-developed in Africa, and an increase in irrigated agriculture holds significant potential for improved agricultural productivity and food production. In 2010, IFPRI estimated that, drawing on available surface and groundwater resources, sub-Saharan Africa could sustainably increase its irrigated crop area from 7 to 21 million hectares by 2050 (IFPRI 2010).

However, smallholder farmers face a number of challenges in accessing productive resources, technology, finance, and markets (IFAD 2016). These challenges are particularly severe for female farmers. Studies show that women produce around 70% of Africa's food, and that if they had the same access to productive resources as men, they could increase the yields of farms by 20%-30% and reduce hunger by up to 17% (FAO 2011). Women also tend to reinvest profits into their households at a higher rate than men, which has a significant impact on poverty eradication.

One of the resources that smallholder farmers, both male and female, need to access for improved productivity, is water. But there are challenges in accessing this resource: the challenges relate on the one hand to infrastructure, and on the other to the legal and regulatory environment. There are also challenges in ensuring that water use is sustainable and allows for the ongoing protection of aquatic ecosystems. The focus in this guideline is on creating a supportive water legal and regulatory environment that can encourage smallholder farmer-led irrigation development.

This guideline sets out practical options for water resources managers for amending existing water use rights systems to better support inclusive rural development and farmer-led irrigation while also ensuring the sustainable use of limited water resources.

The guideline is practical in its intent, aiming to support water managers in making choices that will lead to

more secure water use rights for agricultural livelihoods for small-scale farmers, as well as the development of economically vibrant and empowered rural communities. In doing so, it challenges the idea that water permit systems are the only tool for the regulation and control of water use and poses an alternative, hybrid approach that can be adopted and adapted to achieve improved pro-poor and developmental outcomes.

One of the premises of the report is that water management is not inherently pro-poor, or inclusive: far from it. It is thus necessary for water managers to make a conscious choice regarding water use rights procedures and processes in order to serve both the interests of the rural poor and the national development goals of their country.

Numerous studies have shown that when rural people are able to organize themselves as agents of their own development and have reliable (but not necessarily formalised) access to land and other natural resources, including water, as well as appropriate technology, finance and markets, their livelihoods and well-being improve significantly (IFAD 2016). This guideline seeks to provide guidance to water resources managers on how their actions can serve to support and promote the agency of smallholder farmers in accessing and using water to enhance their productivity.

Under inclusive rural transformation, everyone, without exception, can exercise their economic, social and political rights, develop their abilities, and take advantage of the opportunities available in their environment. This leads to a marked improvement in the economic position and quality of life for small farmers, land poor and landless workers, women and youth, marginalized ethnic and racial groups, and victims of disaster and conflict. (IFAD 2016)



Farmer-led rice cultivation Mozambique (pic. Barbara van Koppen)



SECTION A:
SETTING THE
CONTEXT

Small girl in Ugandan village near Lake Victoria (pic. Barbara Schreiner)

3

TEN CHARACTERISTICS of an effective and pro-poor water use rights system

The use of effective regulation to achieve specified outcomes in the public interest is a core function of government. An effective regulatory system should enhance both local and national economic performance. A poor regulatory system, however, slows investment, wastes public and private resources, leads to weak enforcement or large-scale evasion, and opens up opportunities for corruption (Schiavo-Campo and Sundaram 2001).

One of the challenges in developing an effective regulatory system is that what appears good on paper may well not be so in implementation, particularly in developing countries where limited state resources reduce the potential to implement complex and administratively burdensome systems. An effective regulatory system is, therefore, one that is implementable, obtains the desired impact with minimal cost to the state or the consumer, and protects those that generally bear the brunt of market failure, the poor and the environment. Simplifying regulatory processes can go a long way to improving service delivery and reducing transaction costs for individuals and enterprises, including in the water sector. Such simplification includes examining the need for regulations (such as water use permit systems) introduced by the former colonial authorities, which were designed for control and exploitation of local people and resources rather than for their protection (Schiavo-Campo and Sundaram 2001).

“Government regulation is indeed a case where typically ‘less is more’”

(Schaivo-Campo and Sundaram 2001).

The intended outcome of integrated water resources management is the co-ordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. To achieve these ends, an effective water use rights system is one with the following elements:

- 1 **It supports sustainable and productive water use in the public interest.** A water use rights system should support the productive use and development of water in the public interest and in support of national development goals, while ensuring that such water use remains within ecologically sustainable boundaries.
- 2 **It provides legal protection for small-scale water users.** In striving to support rural development and the growth of small-scale agriculture for poverty eradication and improved food security, a water use rights system must provide at least equal legal protection for the water use of small-scale users, including those who use water through collective or communal systems, relative to large water users and may even strive to prioritise the water use of small-scale users above that of large users, particularly in times of drought, as has been done in some countries in Latin America.
- 3 **It regulates and controls the water abstraction and uses of high impact users:** Not all water users have the same potential impact on other water users and on water resources. Some water users have particularly significant impacts, either due to the volume of water abstracted or due to the potential level of pollution from their activities. These users can be classified as high impact users, and it is particularly important that their water use is strictly regulated and that the

requirements of water legislation such as prior notification and consultation are enforced.

- 4 **It protects ecological functioning of aquatic ecosystems:** The need to protect the ecological functioning of aquatic ecosystems is very well recognised in water policy and legislation in Sub-Saharan Africa. Any water use rights system needs to be able to ensure that the ecological functioning of water resources is sufficiently protected such as through the determination of an ecological reserve.
- 5 **It is cost effective, efficient and makes optimal use of limited state resources.** The water use rights system should strive for maximum efficiency and cost effectiveness both for the state and for the water users, aiming to minimise financial and administrative burdens on both, and particularly on small-scale and poor water users, while still retaining the core effectiveness of the water use rights system. This also requires that where the water use rights system is used as the basis for revenue generation for the water authority, rigorous assessments ensure that the internal processes of the state are efficient, and also that the revenue generated from users exceeds the cost of collecting the revenue. An efficient water use rights system ensures that limited state resources can be used for maximum developmental impact, rather than being consumed by unwieldy and difficult to implement regulatory requirements.
- 6 **It is administratively fair:** Fairness does not imply a one-size-fits-all water rights regime. On the contrary, a differentiated system is required to ensure administrative fairness in the context of significant economic inequalities. A water use rights system should be responsive to the different administrative, educational and financial capabilities of users, as well as requiring an appropriate level of effort from users dependent on the likely level of impact arising from their planned water use. This means that, for example, the system should provide easy application procedures for small-scale users, particularly those in outlying areas and without access to the internet, with much higher demands of information and investigation on users with planned large scale or high impact water uses.
- 7 **It serves to reduce conflict between water users and support effective conflict resolution where necessary.** Where there is competition over water, the water use rights system should reduce potential conflict by setting clear boundaries for water use by different water users, as well as clear rules for constraining water use during times of water shortage. Where conflict over water does arise, the water use rights system should provide a strong reference point for resolving the conflict. This should include, where possible, priorities among different types of uses or users or considerations for calculating such priorities. The system should also ensure that adequate dispute resolution mechanisms are accessible to the poor and to those in outlying rural areas, such as providing legal recognition for local or customary dispute resolution mechanisms as first instance avenues for conflict resolution.

- 8 It is equitable, inclusive and gender-sensitive. The water use rights system must sufficiently address the water use needs and priorities of all water users and must be designed to recognise and support the differentiated and often overlooked water use needs and priorities of women, who make up a large number of small-scale farmers and the majority of domestic water users in Sub-Saharan Africa.
- 9 It makes optimal use of polycentric and multi-level governance: In the face of the challenges and uncertainties posed by climate variability and change, regulation of water use in outlying areas and limited state resources, it makes good sense that a water use rights system should be polycentric (i.e., there should be multiple centres of control), both within the state, and in other, non-state systems such as local water management institutions and local customary law systems. Decentralized, yet nested systems of water governance that have mechanisms for coordination both across levels of governance (local to national) and among various sectors are necessary to respond to the increasing levels of ongoing change in water availability and quality that is becoming the new normal across the region.

- 10 It is participatory: Affected parties, particularly water users, should be able to participate in management of water resources, including co-decision-making with managers, and could even administer elements of the water use rights system, particularly through local level institutions (Badhuri et al 2014). This must include meaningful mechanisms for including traditionally marginalized water users.

Regulation does not mean control, it means having measures in place to enable people to access water without conflict or problems

(Kenyan water official, pers comm, 2018)



Farmers mapping their furrows in the Uluguru Mountains Tanzania (pic. Barbara van Koppen)

SECTION A: SETTING THE CONTEXT



Pump-irrigated field Mozambique (pic. Barbara van Koppen)

4

THE SKEWED NATURE of water use in Africa

Across the rural areas of Sub-Saharan Africa, there is a pattern. A few very large water users interspersed with a very large number of small-scale users, most of whom are small-scale irrigators and smallholder farmers. This calls for a regulatory response that is specifically designed for the Sub-Saharan African context, and which meets the needs and matches the capability of the States, as well as meeting the needs and capabilities of the various water users.

Figure 1, below, indicates the huge discrepancies in water use between different water users in the Inkomati-Usuthu water management area in South Africa. On the extreme left of the graph, 18 registered water users use over 800 million m³ per annum between them (an average of around 40 million m³ per user per annum). The second category shows just over a thousand users using a cumulative total of 71,4 million m³ per annum - an average water use of around 70 000 m³ per annum. At the right-hand end of the scale, the cumulative water use of around 700 registered water users using less than 10 000 m³ per annum is too small to register. Many other water users in this category are not registered at all.

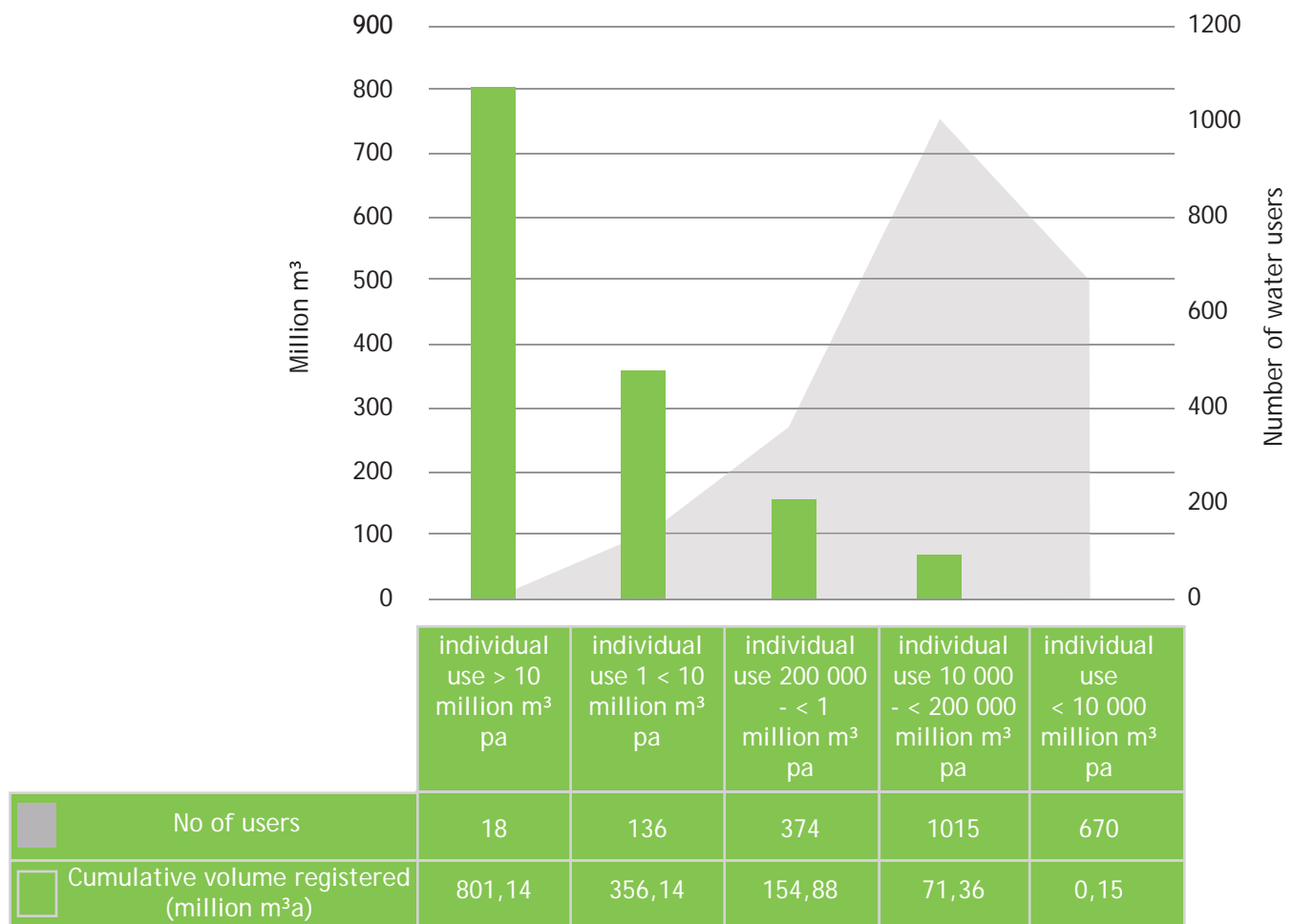


Figure 1: Number of users and volume of registered water use across 5 categories of water use in the Inkomati-Usuthu Water Management Area (based on WARMS data, DWS, 2017)

The clear story told by this graph is that a very limited number of water users use most of the water. In this case, 7% (154) of the water users are using 83% of the water. This picture is not much different in many parts of Africa. In the WamiRuvu basin in Kenya, for example, Sumuni (2016) found that of the 960 permits issued in the basin, 30 used 89% of the water allocated while the remaining 930 permit holders used only 11% of the water.

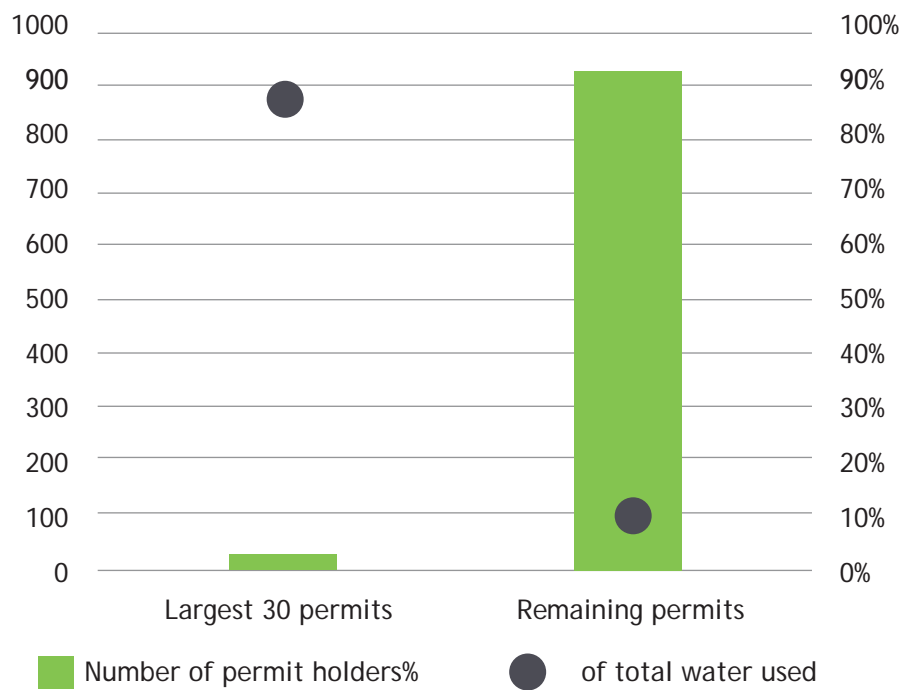


Figure 2: % of water used by 30 largest permit holders vs remaining 930 in WamiRuvu (from Sumini 2016)

From a perspective of making the most effective use of limited state resources, both financial and human, it makes sense to focus the regulatory activities of the state on this limited number of water users, who between them, have the most significant impact on the water use in the catchment. At the other end of the scale, smallholder farmers in the rural areas who are using relatively small amounts of water to escape poverty and to contribute to household and national food security, need legal protection of their water uses, and an environment that enables them to make optimal use of the resources available to them and to access resources where they are currently not available due to regulatory restrictions (see Figure 3).

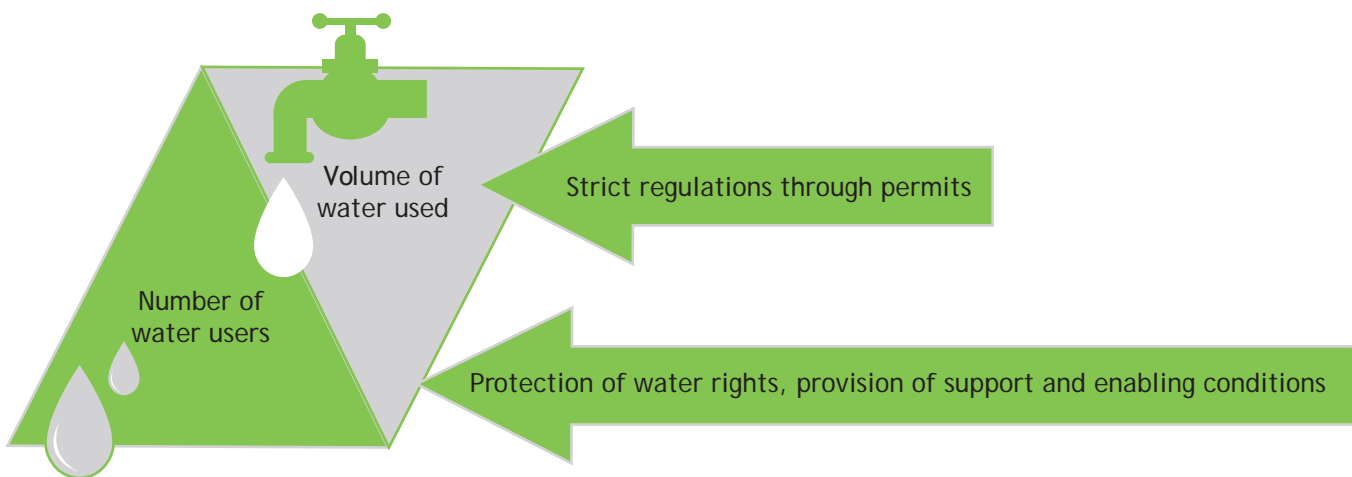


Figure 3: Proposed targeted approach to regulating and supporting water use

It is in this context that three critical functions are identified for government in relation to ensuring that water use rights systems work effectively in the Sub-Saharan African context:

- **Support the sustainable and productive use of water by smallholder farmers**, through the provision of technical water management assistance, enabling access to finance and affordable water infrastructure (ranging from small pumps to small to medium storage infrastructure) and protecting the water use rights of smallholders from the possible predations of much larger water users;
- **Strictly regulate the water use of high impact users**, through the implementation of water use permits and the rigorous enforcement of permit conditions;
- **Monitor and assess:** Monitor and assess irrigation development and other water use trends across catchments to assess when interventions may be necessary and what the nature of the intervention should be. Such monitoring can be done through a combination of registration of significant water uses, monitoring of surface and groundwater status, and remote sensing, particularly in relation to irrigation development.

This calls for the adoption of a hybrid water use rights system, in which a range of different regulatory tools are used that are most appropriate to the context, and most likely to result in the desired intended outcome of water use regulation. A hybrid water use rights system might, therefore, see the use of strictly enforced permits for high impact users, while other instruments are used to support the legal water uses of small-scale users, which could include: legal recognition of customary law; collective permits administered through local water management institutions; or exemptions of domestic and small-scale productive uses of water with prioritised legal status. The various options that can be used are detailed in section B of this guidebook.



Irrigation in Uluguru Mountains, Tanzania (pic. Barbara van Koppen)

SECTION A: SETTING THE CONTEXT



Roadside sellers, Malawi (pic. Barbara Schreiner)

KEY MESSAGES

The following aspects must be kept in mind to move to the most appropriate water use rights system that will result in the desired intended outcome of water use regulation to support smallholder irrigation development in Africa.

- **Inclusive rural transformation is a choice**, requiring choices to be made not just by the agricultural sector in government, but in all those sectors that provide/manage inputs necessary for a vibrant rural economy, including the water sector.
- **The water sector should support and encourage smallholder farmer-led irrigation development (FLID)**. Water management is not an end in itself, but a mechanism to enable the use of water to support the attainment of local and national development objectives. FLID has considerable potential to support national (and international) goals pertaining to ending hunger, improving food security and nutrition, and reducing poverty, particularly in rural areas. Water management approaches must be adapted to enable sustainable FLID to take place, and not to put unnecessary regulatory constraints in the way of smallholder farmers and other small water users.
- **A range of approaches and instruments already exist** that can be adapted and implemented to support smallholder irrigation development in Africa through a hybrid water use rights system.
- **Adopting a hybrid approach to water use rights systems** can produce better results for the state, the public interest, and smallholder farmers in relation to the equitable, productive and sustainable use of water.

SECTION A: SETTING THE CONTEXT



Homestead run-off irrigation MaTshepo Khumbane South Africa (pic. Barbara van Koppen)

6

CURRENT WATER USE

authorisation systems in Sub-Saharan Africa: challenges and opportunities

Several challenges and opportunities with the current water use authorisation systems in Sub-Saharan Africa exist.

6.1 Water use permit systems: designed to fail

Across Sub-Saharan Africa (SSA), the statutory, formal authorisation of water use is done, for the most part, through the use of water permits¹. Such systems have failed to achieve their stated aims, for a number of reasons that are discussed below. The failures are not due to minor challenges that can be addressed, but because the very design of such systems fails to take into account the rural reality of modern Africa, as well as the context of resource constraints within which governments are operating in Africa.

¹ The colonial and neo-colonial origin of these systems has been discussed elsewhere Van Koppen, B., B. Schreiner and P. Sithole. 2018 Decolonizing peasants' marginalization in African water law. *International Journal of Water Law* August 2018. Vol 26/2. For the purposes of this Guidebook, we will use the term "permit systems" to mean all the various legal instruments used to grant administrative rights to water, including confessions and licenses.

As this section will spell out, current water permit systems in SSA are designed to fail.

The intention of water permit systems is essentially two-fold. The primary intention is to ensure the sustainable and equitable use of water in the public interest (regulation) and to minimise conflict over water. This presupposes that permit systems are able to clearly define the water use rights of permit holders. The secondary intention is to provide a mechanism through which revenue can be generated for the state to manage water resources.

From the perspective of water users, water permits provide **evidence of a right to use water**, against which, for example, bank loans can be obtained, as well as evidence of legal compliance, which is particularly important for businesses that are trading internationally or are registered on the stock market.

Consideration of each of these elements reveals the failure of water permit systems in SSA to live up to their promise, and begs the question of what should be done differently to achieve the intended outcomes: sustainable and equitable water use, with a minimum of conflict, and the generation of revenue to contribute to the costs of water resources management.

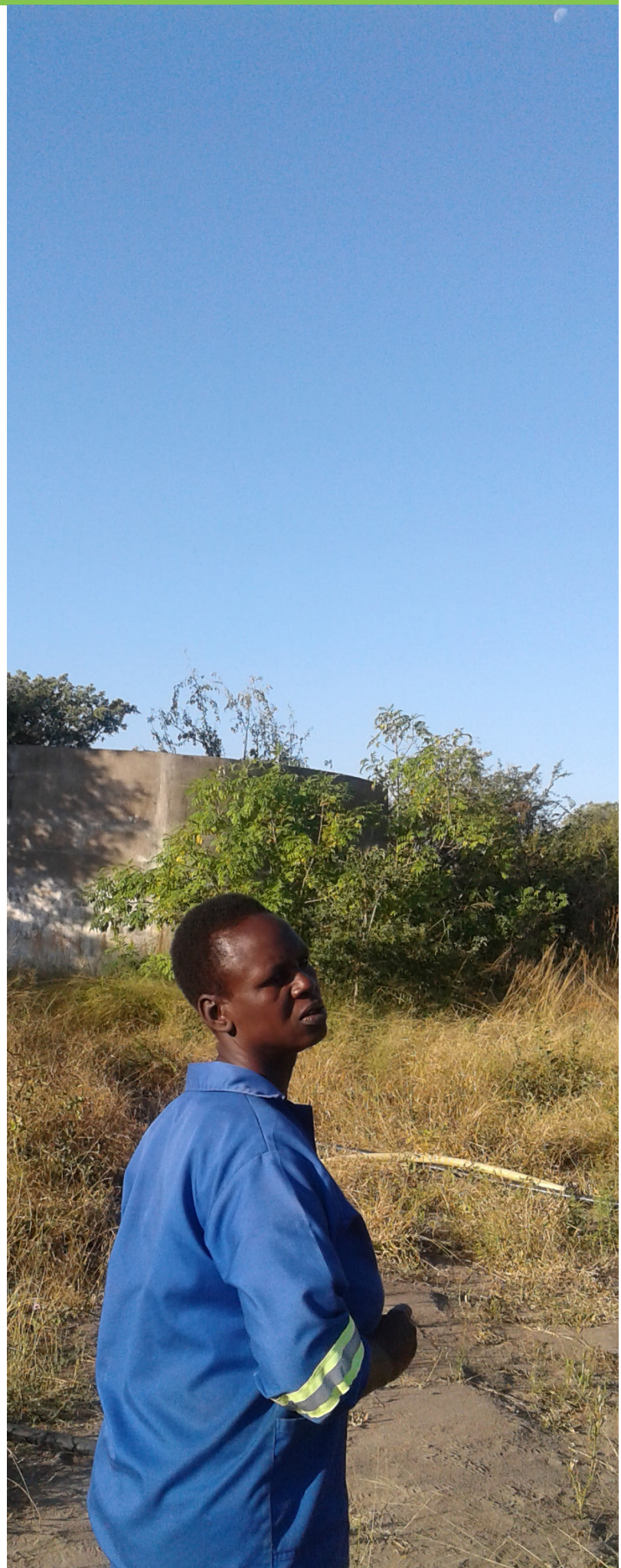
6.2 Permit systems as a regulatory tool

There are three principal indicators of failed water permit systems as a regulatory tool in Africa:

The large number of water users operating without permits: Table 1 shows the number of water permits that have been issued in five countries in Sub-Saharan Africa. Zimbabwe has the highest number, although many of these are decades old, and it is not clear how many are still active. Kenya has approved in the region of 10 000 applications from small-scale users, which only require approval (no permit) and has issued less than 5 000 actual permits. In South Africa, the proposed transition from existing lawful use to water use permits has barely materialised over twenty years of implementation of the 1998 National Water Act.

The numbers of permits issued must be assessed against a backdrop of the numbers of water users that should, according to the laws, have permits. The existing lawful uses are being verified at present that will provide more certainty around water use rights for which certificates can be issued for lawful use. In Kenya, for example, the rural population stands at around 73%² of a population of 50 million: in other words, a rural population of around 36,5 million people. Assuming a household size of six, and assuming that only 5% of rural households are using water for irrigation using a mechanical device, this would amount to approximately 300 000 users that require either a category A approval or a permit to use water. Current legal water authorisation therefore stands at about 5% of what is needed. The same calculations in Zimbabwe indicate over 120 000 water users that require permits, with around 10 000 permits actually issued. These figures raise the question: is the failure of permit systems as a result of poor implementation, or is it built into the very design of the systems?

² <https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=KE>



Female farmer, Mpumalanga, South Africa (pic. Susan Byakika)

Table 1: Status of water permitting in five countries in Sub-Saharan Africa in 2016

Country	Year and number of permits
Kenya (valid abstraction permits)	2006: 100 2010: 250 2011: 300 2013: 1700 2016: 4194 permits; 10 000 authorisations of Category A use (small-scale use)
Malawi (abstraction, waste discharge)	2016: 3042 licences for 1098 water users 1033 active licences for 434 water users; 1881 sleeping licences for 611 water users; 128 cancelled licenses for 52 users.
South Africa	1998-2016: 5956 licences issued Most water use continues under the Existing Lawful Use clause of the Act, which was originally intended as a transition clause but is still the major tool of water authorisation 20 years after the promulgation of the Act (covering around 80 000 registered uses, being verified as lawful water uses.)
Uganda (all permits: abstraction, waste discharge, drilling; - new and renewed)	2010: Total: 491 366 abstraction (232 renewals; 134 new) 89 waste discharge (39 renewal; 50 new) 36 drilling 2016: Total 1320
Zimbabwe (abstraction, including inactive permits)	2000: 9 711 (mostly from 1960-80) 2016: 10 799

The discrimination of permit systems against the rural poor: The inability of the state to implement water permit systems across the board means that the water uses of smallholder farmers is often criminalised: the lack of a water permit renders their water use illegal and has even led to the incarceration of such water users being implemented in some areas (Kenyan water official, pers. comm: 2018). And yet, the majority of sub-Saharan Africa's rural dwellers are either not aware of the legislation requiring them to have a permit to use water or see little incentive to apply for a permit which will result in them having to pay for the permit and the right to use water. Most of these smallholder irrigators use water under customary law, which carries for them as much, if not more, legitimacy as statutory water law.

Inviolate elites. At the other end of the scale, wealthy and powerful elites are often able to obtain permits for significant water allocations, flout permit requirements and conditions, and ignore the negative impacts of their water use on downstream rural communities.

The water sector, in the implementation of permit systems, has failed to learn from the land sector in Sub-Saharan Africa, where experience over many years has shown that the administrative requirements of main-

taining and updating land registration systems generally exceed the limited human and financial capacity of the state. As an example, in South Africa, one of the better resourced countries in the continent, administration of land restitution processes is severely hampered because of outdated computers and poor internet connections in outlying rural areas (Genesis 2014).

Despite this, and despite the fact that water 'titling' is more complex than land, African governments have put in place formal water permits systems with the intention that they should replace all existing water allocation systems, including those governed by customary law (Langford and Russell 2017).

To be able to implement water permit systems as they are currently designed, African countries will have to significantly increase the resources dedicated to implementing these systems, multiplying the human and financial resources currently dedicated to permit processes by a factor of ten at least. The question must be asked as to whether this is the most effective use of limited state resources, or whether there are alternative modes of regulation that can achieve the intended outcomes with more efficient levels of investment.

6.3 Permit systems as a mechanism for revenue generation

Permit systems are also seen as an important tool for revenue generation for the state, intended to either partially or fully cover the costs of implementing integrated water resources management. Whether the attempts by the state to generate revenue from small-scale water users actually generate a surplus appears to have been given surprisingly little attention.

The surplus generated through the implementation of water use charges can be calculated as follows:

$$\text{Surplus generated} = \text{revenue collected} - \text{cost to state of billing and revenue collection}$$

This can be viewed at the individual water user level, or in relation to total revenue and cost calculations.

If one looks at this issue from the perspective of the individual water user, it is possible to identify a point below at which it is not cost effective to bill water users, as indicated in Figure 4: where the potential revenue from small-scale users is outweighed by the costs. This point is influenced by two aspects: the efficiency of the billing system and the resulting cost of billing and revenue collection per user, and the price of water.

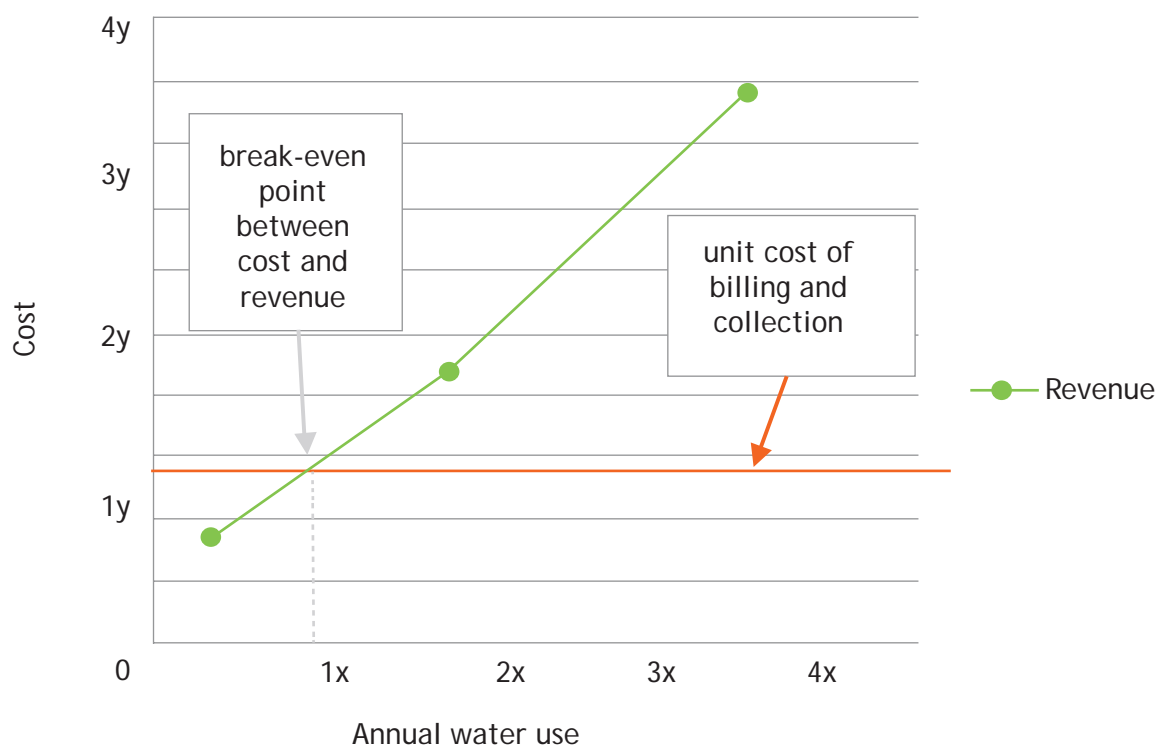


Figure 4: Indicative graph of break-even point on billing and revenue collection

However, one needs to factor further elements into the equation. One is the magnitude of the surplus to be generated through water use charges, i.e., what percentage of surplus, over and above covering the costs of billing and revenue collection, does one wish to achieve.

Secondly, it is necessary to consider the overall percentage of potential revenue that is collected. Collection rates vary from country to country from around 60% in South Africa to close to 100% in Uganda. This does however

provide a skew correlation as Uganda only has 1320 permits for which billing is done whilst South Africa has 80 000 registered users that are billed. The percentage of non-recovery must be considered since the costs of billing users who do not pay are still costs covered by the state. Poor rates of recovery thus imply that a higher surplus must be generated from the users that do pay, in order to ensure that the costs to the state of billing and revenue collection still generate a sufficient surplus. This, however, can be seen as outsourcing the costs of state inefficiency to water users.

A further aspect is the efficiency of the billing system. In South Africa high amounts of water use charges are not paid due to incorrect tax invoices which mean that water users cannot claim their value added tax (VAT) back. This makes them reluctant to pay their charges.

The minimum surplus required by the state from water users can either be set as a percentage of cost, or perhaps as an absolute currency value. Thus, for example, users will only be billed if the revenue generated from billing is at least \$10 greater than the cost of billing. An alternative might be if the revenue generated is at least 40% greater than the cost of billing and revenue collection.

The challenge in determining the point below which billing a water user fails to deliver the minimum surplus required by the state, assuming that all users have been identified and registered, is not difficult, but it does require a detailed assessment of the billing and revenue collection processes in the state, who performs what functions, what amount of time they spend on the process, and what costs are incurred in each step in the process. This can then be converted into a cost of billing and revenue generation per user. In some countries where this cost is generally the same for all water users, regardless of the volume of water being used by them and therefore the potential revenue to be generated from them.

The skewed nature of water use in SSA has been discussed in section 4. The implication of this skewed use is that since the vast majority of the water is used by a small number of large water users, the highest proportion of revenue is, similarly, generated from these water users. The question must then be asked as to whether the relatively high costs to the state of collecting a small amount of revenue from a large number of small-scale water users is worth it, or whether there are better uses to which these limited state resources could be directed.

A further question is whether the state is the most efficient body to collect water use charges. Many large water users are member of local water management institutions such as water user associations (WUA). A WUA can be appointed as a billing agent and can collect water use charges from its members as a considerably lower cost than the state. In South Africa, Uganda and other countries the water acts provides for appointing water user associations as billing agents with a specified commission being paid to them for this service. This has been shown to be a very effective way of collecting revenue from large users.

A further point should be made here, which is that water use permits are not a pre-requisite to be able to charge for water use. In South Africa, water use charges are levied on the basis of registered water use - all water use above a certain threshold must, according to the legislation, be registered with the state, even if a permit is not required. Water use charges are then levied against this registered volume.

Three approaches to resolving the imbalance between cost and revenue exist which can be applied separately, or in some combination:

- Set a **cut-off point**, determined on the basis of the calculations referred to above, below which no charges are levied on water use;
- Substantially **improve the efficiency of the billing and revenue collection system** so as to reduce the costs to the state, which might include using WUAs or the tax authority to collect revenue; and/or
- **Increase the price of water** to reduce the break-even point and the point at which an appropriate surplus is generated, while ensuring that this does not result in increased inequity and the imposition of what is essentially a regressive tax on the poor.

If you overlay the above with the issue of the disproportionate costs imposed on smallholders through water use charges (discussed in the next section), the outcome may well be that one chooses not to charge small water users but to focus, instead, on revenue collection from the much smaller number of large water users. A focus on the efficiency of the system, however, should be adopted without question.

6.4 Disproportionate impact on smallholder farmers

When viewed from the perspective of rural development within a context of high levels of poverty and inequality, it is important to ensure that water use charging systems do not impose disproportionate costs on smallholder farmers: in essence, how does one ensure that water use charges do not amount to a regressive tax system.

An assessment of the implementation of water use charges across Kenya, South Africa and Uganda reveals significantly different cost implications for water users in paying their water use charges.

Due to the extensive penetration of M-Pesa³ into even the rural hinterland of Kenya, payment of water charges carries little or no transactional costs for small-scale farmers who simply pay their bills by phone.

In Uganda, however, where the billing system is run by the tax authority on behalf of the water authority, payment of bills has to be done physically in Kampala. Thus, water users must travel to Kampala from all parts of Uganda, at their own expense, in order to pay their water bills. This puts a disproportionate burden on small users. The water use charges (2017) in Uganda are set out in Table 2.

³ M-Pesa is a mobile phone-based money transfer service operating in Kenya and several other countries. It allows users to use their mobile phones to deposit, withdraw, transfer money

and pay for goods and services.

Table 2: Water use charges in Uganda per category of water use

Item (Permit / Certificate)	Water Use Charges (UGX)	Water Use Charges (USD)
1-400m ³ / day	200 000	54,85
400-1000m ³ / day	1 000 000	274,23
>1000m ³ / day	3 000 000	822,70
Groundwater motorised abstraction	200 000	54,85

Smallholder farmers are charged a fee of UGX 200 000 (USD 54,85) per annum for their water use. A return trip from Mbale to Kampala costs UGX 50 000 and takes over six hours. From Kasese the return trip is around 8 hours at a cost of UGX 60 000, from Mbarara the cost is 40,000 and the return trip takes around 5 hours. Small-scale water users, therefore, can be paying up to 30% of their water use charges in transport costs, and losing a day in travel time. These are significant opportunity costs for small users trying to escape from poverty and earn a decent income from farming activities. According to the Ugandan Bureau of Statistics, the average rural income in 2016/7 was UGX 303 000. The cost of water for smallholder farmers is in the region of 6% of this income, and

the costs of transport to pay the water use charges could be as high as 1,8%. These are disproportionate costs to impose on small-scale users for a very low level of return for the state.


6.5 Permits as evidence

Large enterprises trading internationally or listed on the stock exchange require water permits as evidence of their compliance with national legislation. Water permits also serve as collateral for bank loans. Traditionally banks have struggled to accept non-permitted water use as collateral for bank loans, preferring the apparent security of a water permit - despite the fact that permits do not provide certainty of water availability in times of drought or water scarcity. Banks and other loan funding institutions have, as a result, failed to capitalise on the opportunity presented by large numbers of small-scale water users using water under customary law or exemptions to the obligation to apply for a permit who require small loans for development of their farms.

Increasingly, however, innovative microfinance instruments are being made available to smallholder farmers in Africa which are not reliant on water permits and traditional banking requirements. Some of these have even been tailored specifically to meet the requirements of smallholder farmers who tend to have lumpy, unpredictable and seasonal income which require flexible repayments schedules (see, for example, <https://oneacrefund.org/>).



Hartbeespoort Dam, South Africa (pic. Barbara Schreiner)



SECTION B: DESIGNING AND IMPLEMENTING AN EFFECTIVE WATER USE RIGHTS SYSTEM

Shire River, Malawi (pic. Barbara Schreiner)

FILLING THE TOOLBOX

According to the old saying: if you only have a hammer, everything looks like a nail. Currently, water permit systems are seen all too often as the one tool for regulating and controlling water use - with the result that all water use looks like it needs a permit. However, when there are more tools than just a hammer in the toolbox, it becomes possible to see where a hammer is best used, and where, perhaps, a screwdriver or a saw might give a better result.

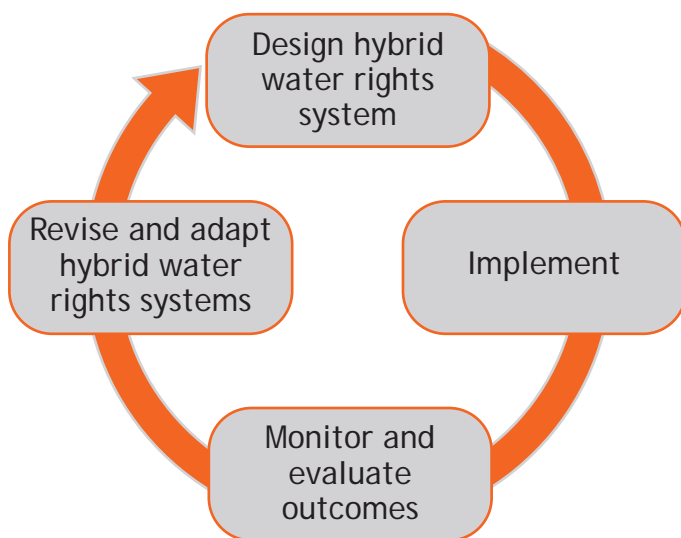
What, then, are the tools in the water manager's toolbox that might give a better result than the blanket application of water permits to all water users? There are some tools that are already in existence and merely need to be harnessed, while others may require amendments to legislation or regulations before they can be adopted.

Some of the key tools that can be utilised in implementing a targeted approach to regulation of water use are discussed in the sections that follow.

7.1 Designing a hybrid water use rights system

A hybrid water use rights system uses a mix of different water use rights tools to obtain the desired outcome of sustainable and equitable water that supports the achievement of national development goals. Such tools include:

- Targeted statutory water permits
- Legal recognition of customary rights
- Prioritisation of water use for small-scale rural water users
- Prioritised exemptions from permit requirements and
- Collective permits



In adopting a hybrid approach, it is important to recognise that the selection of tools used can change as and when circumstances change. Thus, for example, it is possible to replace the use of prioritised exemptions with permits should the state of stress and conflict in the basin require this and should there be sufficient state resources to implement permits in the designated area. Thus, what is proposed is not only a hybrid system, but an adaptive system that uses the most appropriate tools for a particular context at a particular time.

Adopting a hybrid model of water use rights will, if appropriately constructed, result in improved realization of national water and development goals through the optimal use of limited state resources. It will also relieve the administrative and legal burdens on the rural poor. Such a model can be designed carefully to provide strict regulation of high impact water users, while protecting and promoting water use in poor and marginalised communities as a way to promote both poverty alleviation

in these communities and to address local and national food security.

An effective hybrid model is one that is both adaptive and flexible, using appropriate tools for allocating water use rights according to context, need and capacity. There is no single hybrid water use rights system that can be recommended as best practice - an appropriate hybrid model must respond to a range of issues including:

- State capacity for implementing statutory water law;
- The legislative mandate in terms of using a hybrid approach (what does the law allow for, or does the law need to be amended);
- Levels of water stress and competition among users, in different catchments, or across geographical areas; and
- The existence and status of customary water rights and practices.

Effective monitoring of the status of water use and of water resources provides essential feedback into the system to identify areas where interventions may be needed to ensure sustainable and equitable use of water in the public interest, or where the model needs to be adjusted to ensure improved outcomes.

7.2 Reducing 'red tape'

No matter what approaches are selected, government needs to pay attention to improving the efficiency of water use rights systems in general. In the context of Sub-Saharan Africa, in particular, there are limited state resources available (human, financial and informational), and they should be applied with optimal efficiency so as to get the greatest impact in relation to national development goals. This includes deliberate decisions regarding when to put resources into regulating and controlling water use, and when to put resources into supporting and promoting water use for poverty eradication and food security purposes.

Each decision about where resources are to be used implies a decision NOT to use those resources somewhere else. Therefore, each decision regarding where to deploy resources should be informed by a considered view on whether there is greater impact that could be achieved by deploying those resources to do something else.

There are good practice lessons from the private sector that should be adopted by the state in designing and implementing any water use rights system. For example:

Business process re-engineering should be deliberately used to design and implement more streamlined and efficient processes. This would include, for example, the decentralisation of functions where possible and appropriate⁴, either to catchment levels institutions, local government or water user associations; the removal of unnecessary steps and duplication in any water use rights approval process; and the streamlining of the processes for transmitting information between individuals and organisations.

⁴ For further information on decentralisation of water resources management in Africa see Water Governance Decentralization in Africa: A Framework for Reform Process and Performance Analysis <http://www.wrc.org.za/Knowledge%20Hub%20Documents/Research%20Reports/1969.pdf>

A review of decision-making requirements and an analysis of the potential for the reduction of 'red tape' should be conducted in order to reduce the burdens on the public service and to improve services to water users⁵. There is a well-recognised tendency in the public service to accumulate rules, regulations and procedures over time. A regular review of the necessity of each of these rules and regulations can greatly assist in creating a more enabling administrative environment in support of sustainable development and a significant reduction of transaction costs for both the state and water users.

In addition, a regulatory impact assessment can be conducted to ascertain the benefits and costs of the regulatory system and to identify where improvements that benefit both the state and those subject to the regulatory system can be made.

7.3 Water use permits

Water use permits are an important tool in regulating the water uses of high impact users in Sub-Saharan Africa. Due to the highly resource-intensive nature of these systems for both the state and water users, they are only recommended for use in the case of high impact water users, and not as a blanket tool across all users.

As a tool to regulate large water users, there are two options for permitting systems. The first is to set a single cut-off point, above which all water users are required to apply for a permit, and all permit applications are addressed in the same manner and through the same processes.

A second approach builds on the experience of Kenya, where applications for permits are divided into three categories: B, C and D (Category A water use does not require a permit in Kenya). These categories are defined by volume of use for each of the quaternary catchments in the country. Each of these categories demands a different level of detail, information and investigation from permit applicants and the state. This enables limited resources to be most strongly focused on the applications that are likely to have the greatest impact on water resources and on other water users.

Water permit categories in Kenya

The water permit categories are defined as follows:

B: Water use activity deemed by virtue of its scale to have the potential to make a significant impact on the water resource. Permit applications in this category will be determined by the Water Resources Management Authority (WRMA) regional office.

C: Water use activity deemed by virtue of this scale to have a measurable impact on the water resource.

D: Water use activity which involves either international waters, two different catchment areas or is of a large scale or complexity and which is deemed by virtue of its scale to have a measurable impact on the water resource. Permit applications in this category will be determined by WRMA Regional Offices after consideration by the Catchment Area Advisory Committees (CAAC).

D: Water use activity which involves either international waters, two different catchment areas or is of a large scale or complexity and which is deemed by virtue of its scale to have a measurable impact on the water resource. Permit applications in this category will be determined by WRMA Regional Offices after consideration by the CAAC(s) and approval by WRMA Headquarters. (WRMA 2007)

The thresholds for each of these categories were determined according to three principles:

- "The need for flexibility so that different thresholds can be applied to different regions and sub-catchment in response to resource availability and the state of the resource;
- The need to manage the task of issuing permits – so that permit applications for complex situations, over-stressed or over-polluted sub-catchments or aquifers can receive adequate scrutiny and simple permit applications can be approved quickly and easily;
- The extent to which the permit conditions need to be enforced (WRMA 2007).

7.3.1 Renewal of permits

Most permits are issued for a limited time period, specified in the permit. This time period varies from country to country, and according to the intended water use. While such time limits on permits are intended to enable flexibility in water allocation and for adaptive water management in the face of changing contexts (including due to climate change), such renewal adds a further administrative burden to the state.

Permit durations under the current legislation vary considerably. For example: 'at least two years but generally not more than five years' (Uganda); at least five years (Malawi); commonly five years (Kenya); '20 years or any other period as set by catchment council' (Zimbabwe); to not more than 40 years (South Africa).

If the use of permits is limited to high impact users only, the administrative burden of renewal of permits can be managed by the state. If, however, there are large numbers of small-scale users requiring permits to be renewed, the administrative burden increases substantially.

⁵ Information on reducing red tape can be found in Reducing Red Tape: A Facilitation and management manual <http://www.businessenvironment.org/dyn/be/docs/198/ReducingRedTape2.pdf>

7.3.2 Compliance monitoring and enforcement

The effectiveness of a water permit system lies not in the issuing of the permits, but in the capacity of the state (with support from water users, the private sector and civil society) to ensure compliance with permit conditions. This requires: a) an adequate monitoring system to identify where permit conditions are not being adhered to; and b) the capacity to take action against those water users who are not in compliance with their permit conditions. Both of these require significant capacity on the part of the state. Where the capacity does not exist for the state to identify and act against defaulters, permit systems lose their legitimacy in the eyes of water users and the general public.

If a categorised approach is used for permits, as in Kenya, compliance monitoring and enforcement (CME) efforts should be informed by the category of permit issued so that the greatest CME effort is put into the highest category, resulting in the greatest impact with limited state resources.

The ability to conduct effective CME also requires that permits are written in a manner that supports compliance and enforcement - if permit conditions are not sufficiently specific and clear they cannot be effectively complied with or enforced⁶.

7.3.3 Benefits/limitations

The benefits and limitations of a permit system are the following:

Benefits	Limitations
<ul style="list-style-type: none"> • Allows for strict control of water use and the determination of specific conditions for water use • Volume of water to be used and conditions for use are captured in a written document • Permit can be used as collateral to raise loans for development • Allows for the trading of permits where appropriate conditions for trading exist 	<ul style="list-style-type: none"> • Highly resource intensive and expensive to implement particularly over a large number of water users spread over a large area • Requires significant resources for renewal of permits and for compliance monitoring and enforcement • Requires records to be continually updated and maintained as land and water change hands • Administratively burdensome and expensive for small-scale users in particular • Requirements not understood or well accepted by rural small-holders and generally overrides customary law • Generally weak on addressing issues of gender

7.3.4 Practical recommendations

- **The use of water permits should be limited** to high-impact users or particularly sensitive areas and with a clear assessment of the capacity of the state at different levels to issue and renew permits, and to conduct effective compliance monitoring and enforcement.
- **The threshold above which a permit is required** should be determined by consideration of a range of factors, including water stress and competition for water resources in the area, state capacity to implement permits (including renewal and enforcement), ecological importance or sensitivity, and, most importantly, serious consideration of other tools that might achieve the same impact with less demands on state and water user resources, such as customary law, local water management institutions, collective permits etc.

⁶ Useful guidance on best management practices for enforceable permits can be found at <https://calepa.ca.gov/wp-content/uploads/sites/62/2016/10/Publications-Policies-BMPEPermits.pdf> and in the INECE handbook on principles of environmental compliance and enforcement: <https://inece.org/library/featured-resources/principles-of-environmental-compliance-and-enforcement-handbook/>

- A categorised approach to permits as per the Kenyan model results in more efficient use of limited state resources with optimal impact, since the greatest regulatory effort is expended on the highest impact water users. This categorisation can be combined with decentralisation of permit approvals (subsidiarity) (as is done in Kenya) to ensure that lower impact water use approvals are done through decentralised structures for more efficient use of state resources.

7.4 Harnessing customary law

Across most of Sub-Saharan Africa, the state drives water resources management through statutory water laws and institutions, largely ignoring or failing to effectively address the existence of customary water laws and institutions. This is despite the fact that governments do not have sufficient personnel or finances to implement the statutory laws effectively, and despite the fact that customary water law is widespread across the continent and that studies have shown that customary laws and institutions can be particularly effective in settling water use disputes (LEAD 2006; Ramazotti, M. 1996). Principle 22 of the Rio Declaration on Environment and Development recognizes the importance of indigenous customary law for environmental protection and sustainable natural resource management, but modern statutory water law generally doesn't reflect this principle, and customary law is either ignored or set aside as "outside" the purview of statutory regulation, resulting in its standing as second order rights.

Customary law is a distinct legal system which *de facto* regulates the lives of millions of people in Africa (Himonga and Diallo 2017). It is legally recognised to differing degrees in different countries, although rarely recognised in the formal water law of most African countries. Despite the lack of formal recognition, customary systems are the systems under which most smallholder farmers receive and manage their water use rights. It is also important to recognize that customary law is not frozen in time, but rather is adaptable, evolving and often innovative - it is "living law."

...living customary law is the law observed by, or rooted in, each ethnic group of Africa regardless of whether it is recognised by the state. As an unwritten store of legal ideas and knowledge, living customary law is passed down from one generation to the next orally. This store of knowledge is uniquely African in the sense that though not insulated from global conditions, its evolution is shaped within changing African social, economic and political contexts. Moreover, because of its oral nature and flexibility, living customary law can readily and easily be adjusted to meet the varied needs of justice in a decolonised context

(Himonga and Diallo 2017).

Customary law is widespread in contemporary Africa and likely to remain so for the foreseeable future (Zenker and Hoehne 2018). This results in a situation of legal pluralism, where statutory law and customary living law operate in parallel or in a blended system. Surveys from 15 African countries show that Africans living in situations of legal pluralism, do not draw sharp distinctions between traditional authorities and elected officials, but rather see themselves operating within a hybrid political system in which the familiar traditional systems are integrated with the democratic and statutory systems (Logan 2009).

As a result, state water officials have to engage with the implications of both statutory and customary water law in the course of their daily work. Formal water law, however, seldom gives guidance on how officials should engage with or respond to water use rights granted under customary living law.

The mechanisms that water managers have at their disposal to address customary water law are constrained by ways in which national legislation recognizes customary rights, if at all. This ranges from a broad recognition of customary law as law of equal standing to the statutory law (often in the constitution and not specific to water law), to provisions that would apply to water rights appurtenant to customary land rights only, to a recognition of only the rights of certain ethnic groups. In some cases, elements of customary law might be incorporated into statutory law, often with the caveat that it is recognized only insofar as it does not conflict with the constitutional or other statutory provisions.

In South Africa, customary law has an equal status with common law under the Constitution, and the Constitution mandates the courts to apply customary law 'where it is applicable'. This refers to the fact that customary law does not apply in every situation, but only to those people living under such a system. There are two forms of customary law - official customary law, which is an official interpretation has been written down (in legislation, precedent, authoritative textbooks and/or reports), and living customary law, which is oral and continually evolving. Generally, if a litigant wishes to have an action addressed under customary law, she must first prove that customary law is applicable to her and to the issue. Once this has been resolved, if the matter refers to customary living law, evidence will need to be provided to ascertain the nature of the customary law pertaining in the particular community at that time.

There is, therefore, no doubt in South Africa as to the status, or, indeed, the application of customary law. The National Water Act provides that existing lawful water use may continue subject to any existing conditions or obligations attaching to that use. This includes formal agreements amongst farmers as well as water use under customary laws. What remains very unclear, however, and is, to date, untested in the courts, is the status of new water use under customary water law under the National Water Act.

The Malawi Water Resources Act (2013) specifies that the issuing of a permit shall be subject to: "the protection of the environment and water resource from which the abstraction is made, the stream flow regime, and other

existing and potential use of the water resource, including uses by virtue of customary use rights and practices.” (s43b). It does not, however, formally recognise the equality of customary water rights with statutory water rights.

Customary water allocation arrangements are recognised in the Tanzanian Water Policy (2002) and Water Resources Management Act (2009) and are nested in the statutory river basin management structures (Woodhouse et al 2017). However, the Water Resources Management Act (2009, section 52) states that: ‘customary rights held by any person or community in a watercourse shall be recognized and is in every aspect of equal status and effect to a granted’ but that, such rights must be recorded through the normal application procedures within two years after the promulgation of the Act otherwise they will not be recognised.

Formal recognition of customary water law or customary water rights can allow for water allocations made under customary law to be of equal legal status to water allocated through a permit, thus protecting the water use rights of rural water users living in contexts where customary law is active, or even for customary law to be the primary law, as is the practice of the Water Court of Valencia in Spain. This could be done as a blanket approach over the whole country, or through the identification of geographical areas in which or groups of people for whom states recognise customary water law. In a large number of cases, there is a connection between customary water and land or land-based (i.e., forest or fishery) rights which could enable such a distinction to be made. Customary water law, however, should only be applied to people who are members of the community governed by such law. External water users wishing to use water in such an area, particularly those wishing to use large volumes of water, should be dealt with under statutory law and the requirements for a permit and should be held to high standards of due process requirements to ensure that communities holding customary rights are notified and consulted before those permits are granted. To prevent abuse of the system by outsiders or insiders seeking to use high volumes, it is also possible to set a threshold of water use above which customary law would not apply. The challenge would be to set this threshold sufficiently high to allow for customary law to be effectively dispensed, without allowing for water grabbing by outsiders.

7.4.1 Benefits/limitations

The benefits and limitations of harnessing living customary laws are the following

Benefits	Limitations
<ul style="list-style-type: none"> • Minimal administrative burden on the state, except for the requirements to monitor and assess water use • Affordable and accessible for rural small-holders • Contains local level dispute resolution mechanisms • Well understood and accepted by rural communities 	<ul style="list-style-type: none"> • Formal legal systems not well geared for engaging with customary law issues • No written record of water use rights for use in raising finance with formal banking institutions • Generally weak on addressing issues of gender and other traditionally marginalized populations

7.4.2 Practical recommendations

- ① The first step in recognising customary law is to understand the current legal status of customary living law in the country, for example, is it recognised in any relevant legislation such as the Constitution or land or water law and how do those provisions impact the water rights of communities or small-scale water users. This should also take cognisance of collective rights under customary law and not only individual rights.
- ② If it is not formally recognised in any way, or is insufficiently recognised, it may require an amendment to the water law to formally recognise it and to recognise the legal status of water used under customary law as being equal to that used under permits.
- ③ If it is recognised, it may require the development of regulations or subsidiary legislation to define clearly the context in which customary law may be used to allocate and protect water rights and potentially address issues such as the maximum volume of water that can be authorised for use under customary law (to avoid large water grabs, for example); and the conditions under which customary law may operate in regulating water use to ensure, for example, that the approach is aligned with national policy and legislation on gender equality, and that fair dispute resolution mechanisms are in place;
- ④ It will be critical to provide training and capacity building to the officials that will engage with customary living law, and to those mandated to govern it, such as traditional authorities, on its application, its relationship to statutory law and the conditions under which water use may be authorised under customary living law. This is a significant task that should not be underestimated.

7.5 Prioritisation of water use

While the prioritisation of water use by sector is enabled in most water legislation in Sub-Saharan Africa, it appears to be a tool that has been limited in its detailing and application. All current acts stipulate a high priority for environmental flows, with water for the various economic sectors following in various orders. The merging of all agriculture, large and small, into one sector with a common level of priority, has made it difficult to use this tool to protect the water rights of small-scale users in particular. Consideration of smallholder irrigators as a separate category whose water rights need specific protection, particularly in times of water scarcity, will enable the prioritisation tool to be used with greater impact. The need for a high priority to be accorded to small-scale users is informed by a combination of factors: they are particularly vulnerable to lack of water, and seldom have mechanisms of resilience to fall back on in times of water shortage, such as insurance, savings, or other sources of income; small-scale irrigation contributes directly to meeting the human right to food security and nutrition of hundreds and thousands of rural households and from a constitutional and a human rights perspective, their water use should be accorded a high priority (Hellum et al., 2015)

In Zimbabwe, sectoral prioritisation in times of surplus and scarcity is required to be addressed by the Catchment Council in the development of a River System Outline Plan (section 13 of the Act). In most of these plans, there is no distinction between large scale commercial agriculture and smallholder agriculture, and both tend to be placed lowest in the priority for water allocation.

In South Africa, in the National Water Resource Strategy 2nd edition (DWA 2013), the highest priority is given to the ecological and basic human needs reserve, as is required by the legislation. The second highest priority is accorded to water to meet international obligations. In a break from historical tradition, the third highest priority is then given to “the allocation of water for poverty eradication, the improvement of livelihoods of the poor and the marginalized, and uses that will contribute to greater racial and gender equity” (DWA 2013:47).

Strategic water uses (primarily for coal-fired electricity generation) and permitted water uses for other economic purposes are accorded a lower priority.

These priorities should inform the allocation of water entitlements, conflict and dispute resolution and the levels of restrictions imposed on water use during drought. What is important is that the priorities, whether contained in national or catchment level strategies, or in other policies, should be used to inform the design and implementation of a hybrid water use rights system, both in terms of determining what water use rights tools to use to best give effect to the priorities, and in terms of what the priorities for water use are.

7.5.1 Benefits/limitations

The benefits and limitations of the prioritisation of water use are the following:

Benefits	Limitations
<ul style="list-style-type: none"> Minimal administrative burden on the state, except for the requirements for monitoring and assessment of water use by the state Gives rural smallholders protected priority rights to use water 	<ul style="list-style-type: none"> Smallholders have to be made aware of the prioritisation for them to understand how to protect their own water use in times of water scarcity or competition

7.5.2 Practical recommendations

- 1 In the prioritisation of water use sectors, small-scale use and large commercial use in the same sector should be dealt with separately to enable a higher priority to be given to the water use of small-scale users who are particularly economically vulnerable should they lose their access to water either through competition with other users or because they face stringent cuts in the face of drought and water scarcity.

- 2 Water use by small-scale irrigators should be given a high priority, immediately after the water for basic human domestic needs, ecological functioning, and international needs, not least because of the critical importance of their water use in meeting household and national food security needs.
- 3 The prioritisation of water use sectors needs to be given force through the implementation of a hybrid water use rights system so that it is translated into impact on the ground.
- 4 In addition to using the prioritisation for determining allocation of new water uptake, the rules for the curtailment of water use during drought or water scarcity need to be revised to take into account the prioritisation of water use of small-scale irrigators and other small-scale water users to ensure that their water use is curtailed only after the water use of lower priority sectors has been curtailed.

7.6 Exemptions with a raised threshold

Most of the water legislation in Sub-Saharan Africa exempts a certain level of water use from the need to apply for a permit. Generally, such water use is very small and is specifically for domestic water use, domestic food gardening and the watering of livestock for domestic purposes (sometimes referred to as “primary uses”). This is a very small volume of water and does not allow for the taking of water even for small-scale productive or livelihoods purposes.

Thus, in Kenya, water use above 2m³ per day requires a permit in some catchments, while the threshold is 100m³ per day in other catchments. In South Africa the threshold varies, but in stressed catchments it may be as little as 2 000 m³ per annum. Currently, therefore, such exemptions do little to enable the legal productive use of water by small-scale irrigators. Based on an assumption of the need for 2 500 m³ per annum to irrigate one hectare of land (the amount required will vary according to the nature of the crop, the number of rotations, and the amount of rainfall, but this figure is a relatively conservative estimate) in stressed catchments in South Africa and Kenya, farmers irrigating less than one hectare of land must apply for a water use permit. The challenge is that the state does not have the capacity for the implementation of permit systems at this level of micro-management. Nor can it be argued that permits provide a cost-effective revenue collection tool at this scale.

Realistically then, the setting of thresholds for exemptions from the requirement to apply for a permit should be influenced by the ability of the state to implement other systems of regulation of water use, including permits, the possibility of regulating small-scale water use under customary law, and the need for micro-level control of water use by the state. It can be argued that, in order to support rural development and the livelihood development of small-scale irrigators, the exemption thresholds should be raised considerably, and set at not less than 5 000 m³ per annum (per 2 hectares of irrigation), and preferably closer to 12 500 m³ per annum, even in stressed catchments. To make this feasible, it might well be necessary to construct further water storage facilities to increase the availability of water, or to curtail to some degree the water use of large water users such as commercial farms, large industry and urban areas.

There are, however, different types of exemptions that can be used: those that have been discussed above, where there is no administrative requirement of any sort, or those where there is some administrative requirement but no requirement for a permit application. Three models of this nature are discussed below.

7.6.1 Raising the volume allocated under priority use

Currently, most of the water legislation in Africa grants priority use to water for domestic purposes, generally including home food gardens. Raising this threshold to include sufficient water for growing food both for consumption and for the generation of an income in order to buy food has been discussed in the human rights community as a way of protecting the human right to food, in addition to the right to water.

7.6.2 Category A permission: The Kenyan example

In Kenya, full exemptions only exist for water used for domestic purposes. Category A water use is defined as “Water use activity deemed by virtue of its scale to have a low risk of impacting the water resource. Applications in this category will be determined by the WRMA regional offices” (WRMA 2007). This category of water use does not require a permit but does require that the water user makes an application to the WRMA regional office, thus allowing the water use to be registered with the state. Should the water use meet the criteria for Category A, a letter of permission to use the water is issued. This still imposes an administrative burden on the state, although less of a burden than the issuing of a permit. It also provides the water user with a written authorisation, which is of an equal legal standing to a permit. In this sense it gives legal protection to the small-scale water user.

7.6.3 General Authorisations: The South African example

In South Africa, the National Water Act (1998) creates the tool of General Authorisations. The Department of Water and Sanitation is empowered to issue General Authorisa-

tions which specify volumes of water that can be used in specific areas without the need for a permit, although registration of water use above a certain quantity with the state is required. These General Authorisations can be tailored to meet specific catchment conditions, or to support the water needs of specific groups of water users. The conditions under which the water may be used can also be specified in the General Authorisation.

While this tool was conceived of as an enabling tool that would reduce the administrative burden on the state of implementing a water use permit system, it has, to date, been used as a restrictive rather than enabling tool, significantly limiting the water that can be used in this manner.

This tool, if used appropriately, has the potential to significantly reduce the administrative burden of permit systems on the state, and can be targeted very specifically at particularly groups, such as small-scale irrigators, or to particular areas in the country where small-scale water use is to be encouraged and supported (Quibell et al 2007).

Despite the power and use value of this tool, it is not wide-spread in African water legislation, and in most countries, amendment to the legislation would be required to introduce it.

7.6.4 Prioritisation of exempted water use

One of the major challenges in relation to exempted water use is that in most cases it has a lower legal standing than permitted water use, leaving water users with little legal protection in the face of conflict or dispute. In order to address this, it is important for exempted water use to be given equal or higher legal standing than permitted water use. Category A water use in Kenya, for example, which does not require a permit, is formally recognised as having the same legal standing as water use under a permit.

The prioritisation of water use categories, dealt with in section 7.5, is another mechanism that can be used to protect the rights of small-scale users under an exemption.



Rural homestead, Malawi (pic. Barbara Schreiner)

7.6.5 Benefits/limitations

Benefits and limitations of exemptions of a raised threshold are the following:

Benefits	Limitations
<ul style="list-style-type: none"> Minimal administrative burden on the state Affordable and accessible for rural small-holders 	<ul style="list-style-type: none"> Unless exemptions are accompanied by legally binding prioritisation or equal legal status to permitted water use they offer no protection to the water use of small-scale users

7.6.6 Practical recommendations

The threshold for exempted water use can be raised to enable a wider range of small-scale users to use water without requiring a permit. This can also involve the use of tools such as category A water use in Kenya, or general authorisations as in South Africa. In order to give sufficient protection to the water use of small-scale users, formal legal protection or prioritisation of such water use must be declared.

7.7 Collective permits

Collective permits have been used relatively widely in the irrigation sector, where a localised water management institution, such as a water user association, holds a collective permit, under which individual farmers use water (FAO 2016). Collective permits are dependent on a functional body that is able to hold the rights and support the equitable use of that water amongst members and to assist in dispute resolution. Collective permits can be used to serve organisations of commercial farmers and smallholder farmers, including those using water under customary law.

Collective permits in Malawi

The Water Resources Act of Malawi (2013) allows for the use of collective permits in relation to water user associations in particular. It states that:

131._ (1) An association of water users (hereinafter called an "association") may be established by the agreement of the simple majority of a group of water users, at their initiative or also at the initiative of the Authority, for one or a combination of the following purposes__

(a) to manage, distribute and conserve water from a source used jointly by the members of the association;

(c) to acquire and operate an abstraction licence or a discharge permit under this Act;(d) to resolve conflicts between members of the association related to the joint use of a water resource;

International experience suggests that water user organisations (WUOs) function better under specific legislation that sets out the rights and responsibilities of members, rather than other legislation such that pertaining to NGOs or NPOs more generally. They are also more sustainable when they are established from the bottom up and have legitimacy amongst their members - top down establishment seldom works effectively (FAO 2016). For example, in Tanzania, studies have shown how local water management structures, the River Committees, allocate water along a designated stretch of river and resolve conflicts between different water user groups, from smallholder irrigators to commercial farmers and municipalities (Komaekhe and van der Zaag 2011). In general, WUOs are governed by representatives elected by the membership, their operations are paid for by members, and the members are subject to the rules of the WUO but also have certain rights.

In South Africa individual water use rights are issued to individual users. In many areas WUAs have been established to manage water use. This represents more than 60% of the agricultural water use in South Africa. The WUAs also act as billing agents for the water use charges of the state as their own costs must also be recovered.


7.7.1 Benefits/limitations

Benefits and limitations of exemptions of collective permits are the following:

Benefits	Limitations
<ul style="list-style-type: none"> Limited administrative burden on the state Relatively affordable and accessible for organised rural small-holders Supports local management and dispute resolution over local water resources 	<ul style="list-style-type: none"> Requires water users to be organised into a formal structure of some form, such as a water user association Does not accord formal individual rights to farmers Membership may fail to be inclusive of all users of the same source.

7.7.2 Practical recommendations

- Collective permits can be used where groups of water users are organised into local bodies that have the necessary legal standing to hold a permit on behalf of the water users.



SECTION B: DESIGNING AND IMPLEMENTING AN EFFECTIVE WATER USE RIGHTS SYSTEM

River diversion Tanzania (pic. Abraham Mehari)

8

SELECTING the right tools

Implementing a hybrid approach to water use rights requires the selection of the most appropriate suite of tools for the specific context of each country. This section sets out some issues to consider when selecting the suite of tools and designing a hybrid water use rights system.

Table 3 below sets out the benefits of each of the tools or combination of tools to assist in the process of determining which tools to use.

Table 3: Benefits of different water use rights tools

	Blanket permit system	Categorisation of water use permits according to levels of impact	Permits for high impact users combined with other water rights tools	Recognition of customary law	Prioritisation of water use	Use of exemptions with raised threshold	Collective permits	Local water management institutions
Cost efficiency for state	Low	Medium	High	High	High	High	Medium	High
Cost efficiency for small-scale user	Low	Medium	High	High	High	High	Medium	Medium
Legal protection for small-scale users	Low	Low	High	High	High	Low	High	Medium
Effective control of high impact users	Medium	High	High	Low	Medium	Low	Medium	High

Low
 Medium
 High

8.1 Decision tree

8.1.1 Preparation

In preparing for the development of a hybrid approach, the following decision tree will assist. It takes you through a series of questions that enable the consideration of the most appropriate combination of water use rights instruments for your context.

1. What is our desired outcome/policy objective?

For example: 'Sustainable water use supports equitable economic development and poverty eradication'.

In identifying the desired outcome, it is important to focus on the ultimate development outcome. Good water resources management should not be seen as the desired outcome or policy objective on its own, but a tool towards attaining national developmental outcomes.

It is important to keep this objective in mind when designing the hybrid system as it is this outcome that will drive the choice and mix of water use rights instruments.

2. Do we have the capacity (financial, human and information) in government to implement the current water permit system for all water users over the next 5 years?

- Yes/No

If yes: Excellent, go ahead

If no: Will we be able to create the necessary capacity (financial, human and information) for implementation of the current permit system over the next five years?

- Yes/No

If yes: Excellent, go ahead and create the capacity

If no: Would adopting a hybrid water use rights system enable us to achieve our intended outcome better?

- Yes/No

If no: What other options exist for regulating water use that might enable us to achieve our intended policy objective

If yes: Which of the proposed tools could be used effectively in a hybrid approach in our hydrological and socio-economic context?

- Permits for high impact users only and/or categorisation of permits by level of impact
- Recognition of customary law with equal legal standing
- Prioritisation of water use for small-scale irrigators/users
- Exemptions from permit applications with a raised threshold
- Collective permits

In this process the following questions should be considered:

- What are the necessary conditions for each of the tools to work effectively in our context?
- Are these conditions in place, or can they be created relatively easily?
- What are the significant risks related to the use of each tool and how can we mitigate such risks?
- What tools can be implemented under the current legislation and which tools require legislative amendments?
- Should some of the tools be adopted for specific geographical regions or for specific groups of water users only, and if so, how should these be designed?
- Should the hybrid approach be introduced simultaneously across the whole country, or should it be piloted in a particular catchment or geographical area first?

For each of the tools, the following specific questions should be addressed:

Permits for high impact users only and/or categorisation of permits by level of impact

Questions to be considered:

- What threshold should be set for water use permits i.e. what is the minimum volume that requires a water use permit?
 - o In determining this, it is important to be realistic about the capacity of the state to implement a water use permit system across a large number of users. The lower the threshold is set, the larger the number of permits that must be issued, renewed and monitored. The best information available should be used to calculate the number of permits that will be required at different threshold levels.
- How many categories of permits to have.
 - o Too many categories is administratively cumbersome, while too few defeats the objective of having categories of permits. 3 to 4 different categories is probably appropriate in most cases;
 - o Are the categories going to be catchment specific or national? Different hydrological conditions in different catchments may mean that the definitions/parameters for each category vary in the different catchments, as in the Kenyan model. Thus, in more stressed or sensitive catchments, the thresholds for each category might be lower than in unstressed catchments. It is important, however, to ensure that the thresholds are not reduced so far that the state is unable to cope with the resulting administrative burden;
 - o Can this approach be implemented under the current legislation or is a legislative amendment required?
 - o What amendments are required to policies, procedures and systems to be able to implement this approach?
 - o What capacity building and training is needed to be able to implement this approach?

Recognition of customary law with equal legal standing

Issues to be considered:

- Who does customary law apply to and who does it not apply to?
- Where are customary water rights recognized (don't just look in the water laws, also look at land and forest laws, constitutions, etc.) and what is recognized?
- Will it be applicable to these people nationally or only in certain designated areas?
 - o If the latter, how are these areas to be designated?
- Define the threshold at which customary law no

longer applies - i.e. the threshold where permits kick in for high impact users?

- What can be done immediately, with minimal transaction costs such as retraining, development of new systems and procedures etc.?
- What training, new systems and procedures are needed for implementation?

Prioritisation of water use for small-scale irrigators

Issues to be considered:

- What is the definition of small-scale users?
- What level of priority will be given to small-scale users?
- How does this translate into implementation in relation to the granting of permits to other users and into drought rules?
- How is this given force in disputes?
- What can be done immediately, with minimal transaction costs such as retraining, development of new systems and procedures etc
- What training, new systems and procedures are needed for implementation
- Can this approach be implemented under the current legislation or is a legislative amendment required?
- What amendments are required to policies, procedures and systems to be able to implement this approach?
- What capacity building and training is needed to be able to implement this approach?

Exemptions from permit applications with a raised threshold

Issues to be addressed:

- How does this align with prioritisation? - without prioritisation, exemptions may have secondary legal status to permits, which is to be avoided?
- What is the threshold for exemptions? This is essentially the same question to be addressed as under the issue of permit for high impact users and requires consideration of the number of permits that the state can cope with, as well as how to minimise the transaction costs imposed on small-scale water users who are trying to escape from poverty.
- What can be done immediately, with minimal transaction costs such as retraining, development of new systems and procedures etc.?
- Can this approach be implemented under the current legislation or is a legislative amendment required?
- What amendments are required to policies, procedures and systems to be able to implement this approach?

- What capacity building and training is needed to be able to implement this approach?

Collective permits

Considerations to be addressed:

- In what conditions should collective permits be used, instead of alternative tools such as the recognition of customary law?
- What legal organisational structure is necessary to be able to hold a collective permit? It is better to work with existing legal institutional options than to set up new institutional requirements with the linked administrative burdens? Water user associations is one such option, but there may well be others under either water or other legislation, such as communal property associations or community trusts.
- Are there inclusive existing groups of small-scale water users that can be issued with collective permits?
- What can be done immediately, with minimal transaction costs such as retraining, development of new systems and procedures etc.?
- Can this approach be implemented under the current legislation or is a legislative amendment required?
- What amendments are required to policies, procedures and systems to be able to implement this approach?
- What capacity building and training is needed to be able to implement this approach?

Hybrid Water Use Rights Strategy and Consultation

Once you have clarity on which of the tools you wish to use in the hybrid approach, and how they will be used, and under what conditions, it is recommended that you draft a strategy for the implementation of a hybrid water use rights model and publish it for comment.

It is advisable to consult widely on such a strategy, particularly with affected communities which would include those using water under customary law and those responsible for ensuring the implementation of customary water law.

Once consultations have been held, the strategy should be refined and formally gazetted.

Communication

Once it has been gazetted, it is critical to communicate the outcomes widely, particularly to small-scale water users so that they fully understand their water use rights under the new strategy.

8.1.2 Legislative Amendments

Where legislative amendments are required before implementation is possible, there are key steps in the process recommended as below.

The first step is to identify what amendments are required in the primary water legislation, and what can be dealt with through amendments to regulations or other subsidiary legislation, bearing in mind that regulations can only be used to elaborate on matters contained in the primary legislation and cannot be used to 'amend' the intent of the primary legislation.

The second recommended step is to draft a document setting out the principles for legislation supporting a hybrid water use rights system and to consult widely on the principles and the approach. This is important because adopting a hybrid approach will be a significant change from a blanket permit approach, and input from key stakeholders is important in ensuring that all aspects of the proposed amendments are considered, and that there is buy-in to the change from stakeholders. This includes ensuring consultation with small-scale water users, both women and men.

Engaging with the relevant parliamentarians/portfolio committee members at this point is also critical to ensure that they are on board with the proposed changes well before the actual amendments are tabled before them. This will make the passage of the legislation eas-

ier and will enable the drafters to deal with key issues raised by members of parliament before the legislation is tabled.

Once this has been done, the proposed legislative amendments can be drafted and taken through the relevant procedures to promulgation.

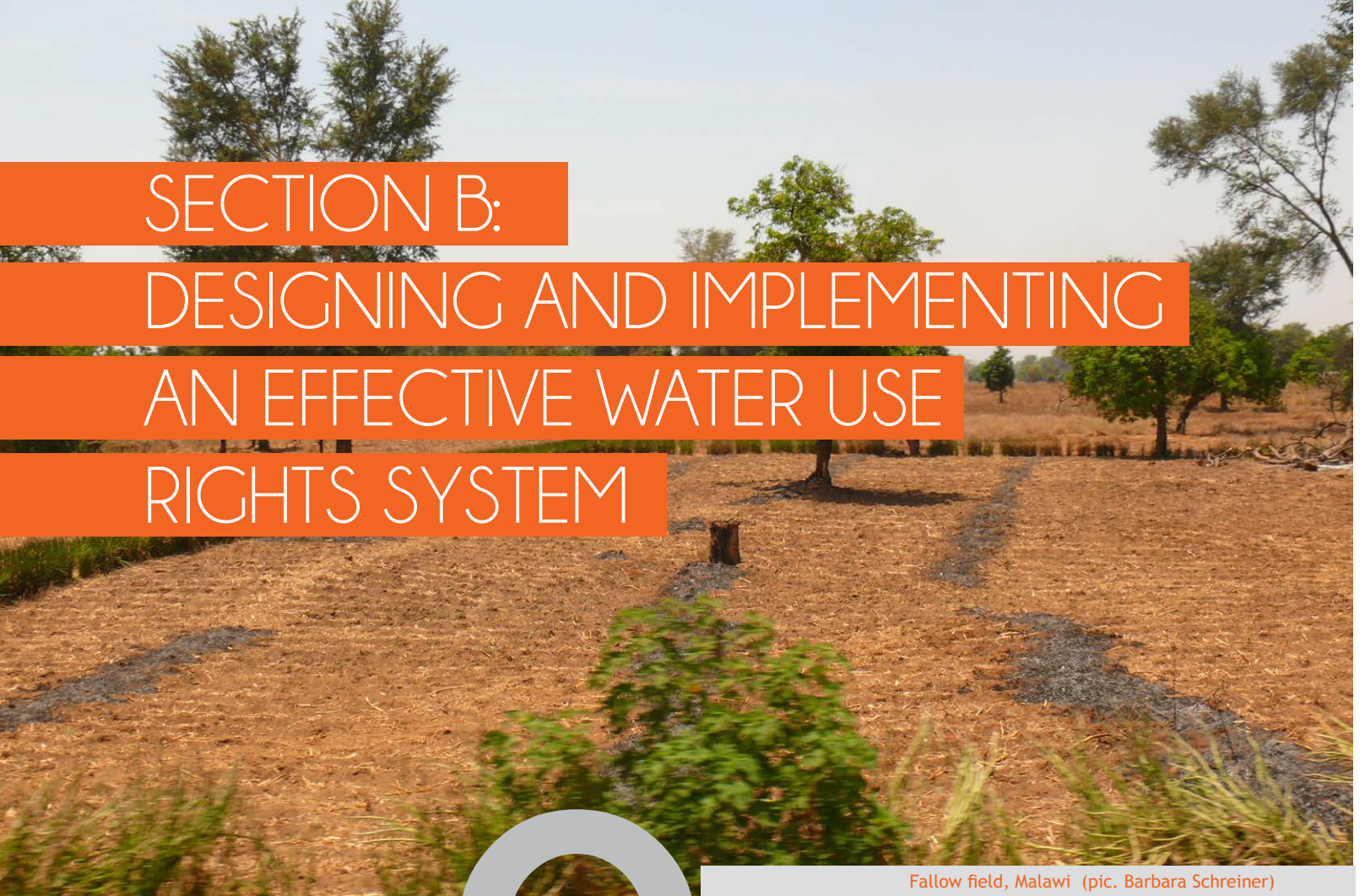
8.2 Capacity building, communication and change management

A critical part of introducing a hybrid water use rights system is ensuring that those involved in implementing the system, both in government and key stakeholders, understand the new system, and are sufficiently well trained to be able to implement the system.

Where the recognition of customary law is a part of the hybrid system it is particularly important to ensure that communities and traditional authorities responsible for implementation of customary law understand the hybrid system, and how customary water use rights fit into the bigger picture. This may require a significant communication campaign in the rural areas in particular.



Pump irrigation Zambia (pic. Barbara van Koppen)



SECTION B:
DESIGNING AND IMPLEMENTING
AN EFFECTIVE WATER USE
RIGHTS SYSTEM

Fallow field, Malawi (pic. Barbara Schreiner)

9

REVENUE GENERATION

through a hybrid system

One of the critical aspects of a water permit system is that it allows the state to impose water use charges that contribute in part to covering the costs of managing water resources. This is a critical source of revenue for the state, particularly where allocations from the national fiscus are insufficient to cover the costs of water resources management by the state.

There are, however, several questions that must be asked about the cost effectiveness of current billing and revenue systems as used by the state. The most critical question is whether water use charges for small-scale water users actually brings in revenue to the state or whether it is actually costing the state money. To ascertain this, it is necessary to calculate the cost to the state of billing small-scale users and collecting the revenue, relative to the amount of money collected from small-scale users. The costs incurred by the state include personnel salaries; equipment such as computers, printers, vehicles; software and software updates; stationery; office rental; and financial/banking costs. In Kenya, costs of billing include transport costs in those areas in which water bills are still delivered by hand to water users.

On the other side, there is a question as to whether small-scale users bear a disproportionate cost related to paying water use charges. In Uganda, for example, water users must travel to Kampala to pay their water use charges. For small-scale users, the costs of travelling by taxi from outlying areas can make up a significant cost relative to the income generated through the use of relatively small amounts of water.

Surprisingly little work has been done by government on this issue. There is, however, a threshold below which the billing of small-scale users is not cost effective and should be discouraged. The point of this threshold should be calculated for each country, since it relates to the efficiency of the billing and revenue collection system and the cost of water.

A hybrid water use rights system enables charging for water use in two ways. Firstly, the high impact water users that have permits can be charged against those permits. For other water users who are using volumes of water above the cost-effective threshold, registration of their water use with the state is sufficient to enable water users to be charged. In South Africa, for example, water use charges are levied on water users through a system of registered water use, not through a system of permits only.

9.1 Practical recommendations

- 1 Ascertain the threshold below which it does not make sound financial sense to charge water users by calculating actual costs of billing and revenue generation against revenue;
- 2 For water users above this threshold, but under the threshold required for permits, the requirement can be made for them to register their water use so that the resource can be managed, and water use be known and only if necessary they can be billed. Water use charges can thus be imposed on those above the cost efficiency threshold through a combination of registration of water use and/or permits.
- 3 Consider the possibility of other institutions, such as WUAs and the state revenue agency, assisting in the collection of revenue.



Irrigated farming (pic. anonymous)



SECTION B:

DESIGNING AND IMPLEMENTING

AN EFFECTIVE WATER USE

RIGHTS SYSTEM

River diversion Tanzania (pic. Abraham Mehari)

10

CONCLUSION

the right tools

This guideline provides a practical tool for the development and implementation of hybrid water use systems that are appropriate to African social and governance contexts. The adoption of a hybrid approach to water use rights systems can result in improved water use regulation and management in a context of limited state resources, and high levels of inequality in water use. Developing the right mix of tools can enable the state to achieve improved regulation of water resources, while also ensuring that small-scale users, in particular, are no longer criminalised and that their water use is given full legal support.

A hybrid water use rights system will serve both to protect the water use of the vast numbers of small-scale water users across Africa and to enable the state to focus limited resources on regulating the impacts of those few water users who use most of the water. This focus will not only ensure that the state can regulate the few, high impact users, but will also ensure that these users, many of whom need to be able to show compliance with national legislation, are able to do so. It is, in this regard, a win-win approach.



Vaal River, South Africa (pic. Barbara Schreiner)

REFERENCES

- AGRA. (2017). Africa Agriculture Status Report: The Business of Smallholder Agriculture in Sub-Saharan Africa (Issue 5). Nairobi, Kenya: Alliance for a Green Revolution in Africa (AGRA). Issue No. 5
- Agrawal and Clark 1999: Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation ARUN AGRAWAL and CLARK C. GIBSON World Development Vol. 27, No. 4, pp. 629±649, 1999
- Badhuri et al 2014: The Global Water System in the Anthropocene: Challenges for Science and Governance Anik Bhaduri, Janos Bogardi, Jan Leentvaar, Sina Marx Springer2014
- Beekman et al 2014: Beekman, W., G.J. Veldwisch, and A.Bolding. 2014. Identifying the potential for irrigation development in Mozambique: Capitalizing on the drivers behind farmer-led irrigation expansion. Physics and Chemistry of the Earth, Parts A/B/C 76-78: 54-63. doi: 10.1016/j.pce.2014.10.002
- Curristine et al 2007: Improving Public Sector Efficiency: Challenges and Opportunities Teresa Curristine, Zsuzsanna Lonti and Isabelle Joumard OECD Journal on Budgeting Volume 7 - No. 1 OECD 2007
- Department of Water Affairs (DWA), Republic of South Africa. 2013. National Water Resource Strategy Second Edition: Water for an Equitable and Sustainable Future. Pretoria: Department of Water Affairs
- FAO 2008: Customary water rights and contemporary water legislation: Mapping out the interface. FAO Legal Papers Online December 2008
- FAO 2011: The State of Food and Agriculture 2010-2011. Food and Agriculture Organization of the United Nations. Rome, 2011
- FAO 2016: Exploring the concept of water tenure. Stephen Hodgson. FAO Land and Water Discussion Paper 10. FAO, Rome. 2016
- Genesis 2014: Implementation Evaluation of the Restitution Programme Final evaluation report by Genesis Analytics for the DPME 28 February 2014
- Hellum, A., P. Kameri Mbote and B. van Koppen (eds). 2015. Water is life: Women's human rights in national and local water governance in Southern and Eastern Africa. Harare: Weaver Press
- Himonga C and Diallo F "Decolonisation and Teaching Law in Africa with Special Reference to Living Customary Law" PER / PELJ 2017(20) - DOI <http://dx.doi.org/10.17159/1727-3781/2017/v20i0a3267>
- IFAD (2016). Rural Development Report 2016: Fostering inclusive rural transformation. IFAD, Rome
- IFAD. 2015. Getting to Work: Financing a New Agenda for Rural Transformation. Rome, IFAD.
- IFPRI 2010: What is the irrigation potential for Africa? A combined biophysical and socioeconomic approach Liangzhi You, Claudia Ringler, Gerald C. Nelson, Ulrike Wood-Sichra, Richard D. Robertson, Stanley Wood, Zhe Guo, Tingju Zhu, Yan Sun. IFPRI DISCUSSION PAPER. 2010
- IPCC (Intergovernmental Panel on Climate Change). 2014. Climate change 2014: Synthesis report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, IPCC.

Komakech and van der Zaag 2011: Understanding the emergence and functioning of river committees in a catchment of the Pangani basin, Tanzania, Komakech, H.C. and van der Zaag, P., *Water Alternatives* 4(2): 197-222
Langford, M., & Russell, A. (Eds.). (2017). *The Human Right to Water: Theory, Practice and Prospects*. Cambridge: Cambridge University Press. doi:10.1017/9780511862601

LEAD 2006: 'Customary Laws for Access to and Management of Drinking Water in Tanzania', 2/1 *Law, Environment and Development Journal* (2006), p. 50, available at <http://www.lead-journal.org/content/06050.pdf>

Logan, C. 2009. Selected chiefs, elected councillors and hybrid democrats: popular perspectives on the co-existence of democracy and traditional authority. *Journal of Modern African Studies* 47(1), 101-128.

OECD 2010: *Cutting the Red Tape: Simplifying Administrative Procedures in the MENA in Progress in Public Management in the Middle East and North Africa: Case Studies on Policy Reform* OECD 2010

Quibell et al 2007: *General Authorisations as a Tool to Promote Water Allocation Reform in South Africa*', 3/2 *Law, Environment and Development Journal* (2007), p. 164, available at <http://www.lead-journal.org/content/07164.pdf>
Ramazotti, M. 1996. *Readings in African customary water law*. FAO Legislative Study 58. Rome: Development Law Service, Food and Agriculture Organization of the United Nations (FAO)

Schiavo-Campo and Sundaram 2000. *To Serve and to Preserve: Improving Public Administration in a Competitive World*. Schiavo-Campo, Salvatore; Sundaram, Pachampet. Asian Development Bank. <http://hdl.handle.net/11540/278>. License: CC BY 3.0 IGO.

Serdenczny et al 2016: *Climate change impacts in Sub-Saharan Africa: from physical changes to their social repercussions* Olivia Serdeczny, Sophie Adams, Florent Baarsch, Dim Coumou, Alexander Robinson, William Hare, Michiel Schaeffer, Mahé Perrette, et al. *Regional Environmental Change* · January 2016

Sumuni, P.M. 2016. *Influence of institutional set-up on performance of traditional irrigation schemes, a case study of Nyandira Ward, Mvomero District Tanzania*. Master thesis, Sokoine University of Agriculture, Morogoro, Tanzania. Shurie, Mohamed M; Mwaniki, Boniface & Kameri-Mbote, Patricia. *Water Permit Systems, Policy Reforms and Implications for Equity in Kenya*. Pegasys Institute, IWMI, REACH, March 2017.

Van Koppen, B.; Nhamo, L.; Cai, X.; Gabriel, M. J.; Sekgala, M.; Shikwambana, S.; Tshikolomo, K.; Nevhutanda, S.; Matlala, B.; Manyama, D. 2017. *Smallholder irrigation schemes in the Limpopo Province, South Africa*. IWMI Working Paper 174. Colombo, Sri Lanka: International Water Management Institute (IWMI).. doi: 10.5337/2017.206 http://www.iwmi.cgiar.org/Publications/Working_Papers/working/wor174.pdf

WHO 2017: *Nutrition in the WHO African Region*. Brazzaville: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

Woodhouse et al 2017: Philip Woodhouse, Gert Jan Veldwisch, Jean-Philippe Venot, Dan Brockington, Hans Komakech & Ángela Manjichi (2017) *African farmer-led irrigation development: re-framing agricultural policy and investment?*, *The Journal of Peasant Studies*, 44:1, 213-233, DOI: 10.1080/03066150.2016.1219719

World Bank 2008: *SUMMARY OF BACKGROUND PAPER 9 AFRICA INFRASTRUCTURE COUNTRY DIAGNOSTIC Irrigation Investment Needs in Sub-Saharan Africa* Liang Zhi You June 2008

WRMA 2007: *Water Resources Allocation Thresholds for Classification of Permits*. First Edition. October 2007. Water Resources Management Authority, Kenya.

Zenker and Hoehne 2018: *The State and the Paradox of Customary Law in Africa*. Olaf Zenker, Markis V Hoehne (eds). Routledge, London and New York, 2018



9 780201 379624