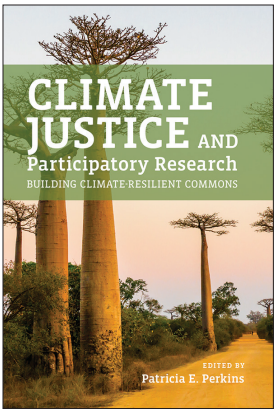
UNIVERSITY OF CALGARY
Press



CLIMATE JUSTICE AND PARTICIPATORY RESEARCH: BUILDING CLIMATE-RESILIENT COMMONS

Edited by Patricia E. Perkins

ISBN 978-1-77385-408-3

THIS BOOK IS AN OPEN ACCESS E-BOOK. It is an electronic version of a book that can be purchased in physical form through any bookseller or on-line retailer, or from our distributors. Please support this open access publication by requesting that your university purchase a print copy of this book, or by purchasing a copy yourself. If you have any questions, please contact us at ucpress@ucalgary.ca

Cover Art: The artwork on the cover of this book is not open access and falls under traditional copyright provisions; it cannot be reproduced in any way without written permission of the artists and their agents. The cover can be displayed as a complete cover image for the purposes of publicizing this work, but the artwork cannot be extracted from the context of the cover of this specific work without breaching the artist's copyright.

UNIVERSITY OF CALGARY
Press
press.ucalgary.ca

Acknowledgement: *We acknowledge the wording around open access used by Australian publisher,* **re.press**, *and thank them for giving us permission to adapt their wording to our policy* http://www.re-press.org

12

Inequality in Water Access for South Africa's Small-Scale Farmers Amid a Climate Crisis: Past and Present Injustices in a Legal Context

Patience Mukuyu and Mary Galvin

Introduction: Access to Water, Food Security, and Climate Change

In South Africa, as in most developing countries, small-scale farming is central to achieving food security, particularly in communal areas (Khalil et al., 2017)). These communal areas (formerly called homelands, imposed by the apartheid regime) are characterised by high poverty levels alongside widespread unemployment (von Fintel & Pienaar, 2016). Although several government policies aim to improve the agricultural productivity of historically disadvantaged farmers on communal land, their limited access to water is a critical constraint. Access is marred by two interrelated factors: climatic variations and a divisive history surrounding water allocations and access.

South Africa is generally described as water stressed (Denby et al., 2016), meaning that water is needed for many uses but the available water resources are too limited—particularly due to frequent droughts—to meet the high and growing demand. This water stress is compounded by highly unequal distribution of water resources between Black historically disadvantaged

individuals (HDI) and white historically advantaged individuals (HAI), skewed infrastructure distribution, and limited and weak water-use rights among the vulnerable.

The 2021 Intergovernmental Panel on Climate Change (IPCC) report projected with high confidence increasing temperatures, a decrease in mean rainfall and frequent drought occurrences (IPCC, 2021). In line with these projections, parts of South Africa will face drought or biophysical water scarcity, which will be even more acute with already insufficient water resources. Yet the challenges faced by farmers are not only biophysical, but also hydropolitical. In 2006, a United Nations Development report boldly asserted that

> there is more than enough water in the world for domestic purposes, for agriculture and for industry. The problem is that some people—notably the poor—are systematically excluded from access by their poverty, by their limited legal rights or by public policies that limit access to the infrastructures that provide water for life and for livelihoods. In short, scarcity is manufactured through political processes and institutions that disadvantage the poor (UNDP, 2006, 3).

The recognition of manufactured scarcity means that "water equity—fair shares in access and entitlements to water, and benefits from water use—should form a central ambition in the decades to come" (Calow & Mason, 2014, p. 2).

The allocation of water amongst those with competing needs is often influenced by water tenure, defined by the Food and Agricultural Organization (FAO, 2020, p. 3) as

> The relationships, whether legally or customarily defined, between people, as individuals or groups, with respect to water resources.

The definition of water tenure captures the recognition of customary norms, reflecting social relationships, or to embody legal rights. Yet what is most important is that the concept of water tenure is closely aligned to security of tenure. Water tenure security allows for the realisation of both water and food security, which is especially critical in the context of climate change. Water tenure security depends on the legal recognition and enforcement under

formal, statutory law, and there are debates about how legal systems can best achieve this.

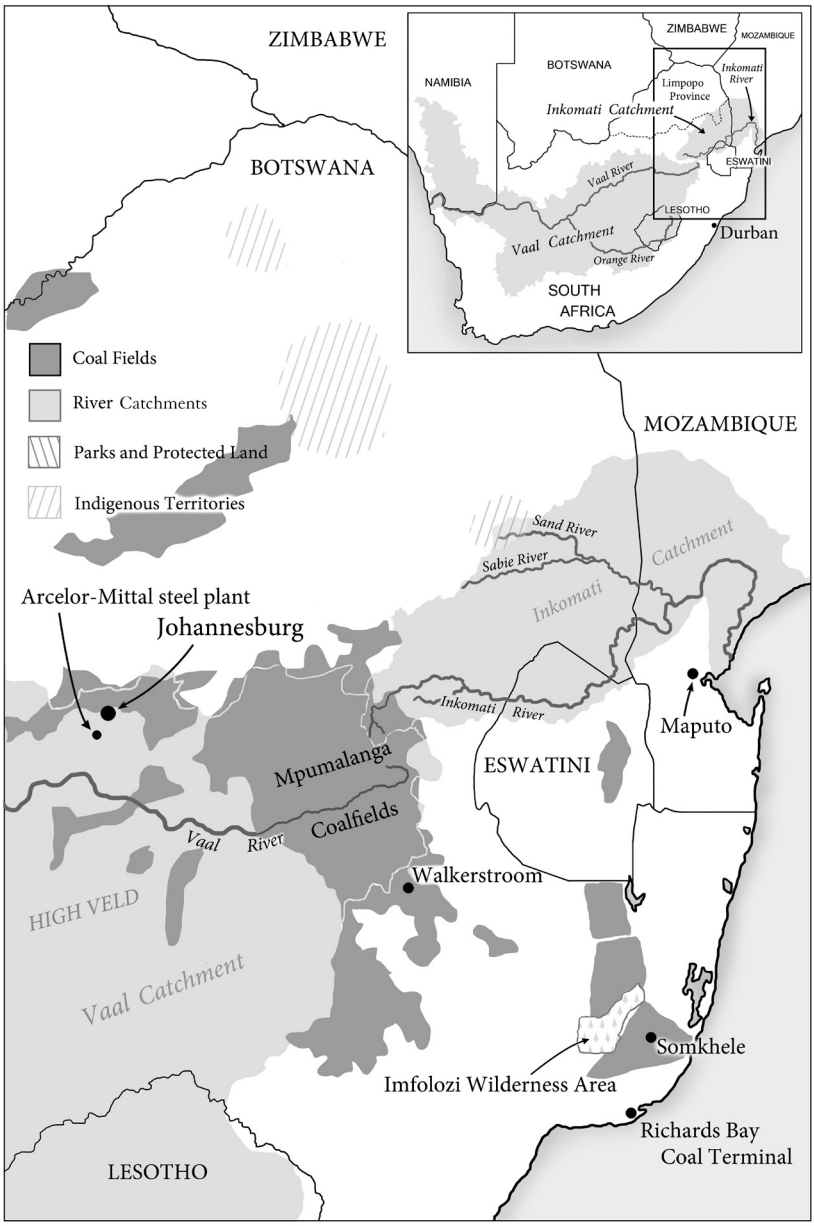
The focus of the global debate among practitioners and academics on water tenure security is on the needs of vulnerable, small-scale farmers in the face of resource scarcity and competing water needs. In other words: How does the implementation of statutory water law help to reduce small-scale farmers' experiences of water insecurity? Reporting on a case study that is one aspect of a wider research project, this chapter discusses the legal framework for water resource allocation in view of both customary and statutory water laws, in the context of South Africa's discriminatory colonial history. This provides the context for understanding how small-scale farmers' access to water is affected by statutory and customary law and governance institutions.

Our participatory research approach, which included interviews with small-scale farmers directly affected by water access challenges, gave us insights into how various forms of water rights are intertwined with social inequities, exacerbated by climate-related rainfall changes, and how small-scale farmers are taking action to protect their livelihoods. The chapter concludes by indicating the direct relevance of our findings for policy concerned with achieving equity in the allocation of water resources. In particular, we explore how water tenure arrangements are (and could be) formulated to ensure equitable water access and to narrow the divide between policy, science, and implementation.

Research Design and Methodology

This study focuses on the Inkomati Catchment (or watershed; see Map 6; see Map 6, page 242), located in a semiarid region with variable rainfall and frequent droughts. In particular, it focuses on the communal land within the Sabie-Sand sub-catchment, one of the three sub-catchments in the Inkomati Catchment (alongside the Crocodile and Inkomati sub-catchments). Formerly part of apartheid homelands of Gazankulu and Lebowa, the area exemplifies the complexity of implementing both customary and statutory legal frameworks on communal land.

Water on communal land areas is often interlinked with access to water for both domestic and productive use, with communities relying on water from various sources (e.g., wells, rivers, and streams) for multiple uses (e.g., domestic use, livestock watering, and crop irrigation) (van Koppen et al.,



Map 6 South Africa—Vaal and Inkomati Catchments, and Coalfields

Fig. 12.1 The first author interviews a small-scale farmer in the Inkomati Catchment.

2020). The typical separation of domestic and agricultural uses of water is not clear cut in rural areas, where communities have such multiple water-use systems (Mukuyu et al., 2021; van Koppen et al., 2020; Hofstetter et al., 2021). Clearer recognition by government and local authorities of community efforts to supply their own water needs under customary water tenure can further enhance water access for vulnerable small-scale farming communities where their access is protected through statutory law (van Koppen et al., 2021).

Using a social constructivist methodology, based on the theory/awareness that reality and knowledge are constructed through shared discourse and social conventions, it is possible to generate knowledge about water access and water tenure arrangements using a ground-up approach to build and share understanding. This approach parallels a participatory research methodology where systematic inquiry is conducted in direct collaboration with those affected by the research, and provides a learning experience for both the researcher, local participants, and stakeholders (Couto, 1987; Vaughn and Jacquez, 2020).

This chapter is based on a review of secondary literature as well as twenty-five in-depth interviews conducted by the first author with small-scale farmers between April and August 2021, as well as her involvement in a related research project being conducted by the International Water Management Institute (IWMI).

Interviews focused on small-scale farmers' experiences and perceptions of water access and entitlement to water (Figure 12.1), and were guided by

an interview questionnaire. A local non-profit organisation that has worked in the area for decades, the Association for Water and Rural Development (AWARD), helped introduce the researchers and gain access to villages. Households were selected through purposive sampling to target those involved in farming and irrigation activities. The local AWARD community facilitator who is fluent in the local languages of SiSwati and Shangaan assisted with translation, and interviews were recorded with the permission of interviewees.

Our work in the area is ongoing, and the next stages of this study will include observation of catchment forum meetings, secondary data analysis for technical contextual background in water-use and availability projections, as well as key informant interviews to understand relationships between farmers and local catchment agency and government departments.

Water Dispossession in the Colonial and Apartheid Era

The history of land dispossession set the foundation for inequitable water access in democratic South Africa. In particular, the 1913 Natives Land Act had a devastating impact on the majority Black population, who were relegated to ethnically defined "homelands" that comprised only 13 per cent of the country's land. The apartheid regime forcibly removed people from their land, controlling its natural resources such as minerals, forests, and water. The white minority consolidated power, amassing the most strategic and favourable land and accompanying natural resources—including water resources.

Paradoxically, South Africa was a legally pluralistic country with clear lines of legal jurisdictions. In other words, while customary laws were upheld in the homelands, statutory laws applied in the exclusively white areas. The main impetus of the early 1900s irrigation development period, supported by the 1912 Irrigation and Conservation Act, was to ensure adequate water supply to support agricultural development by the growing settler community (Tempelhof, 2017). As such, white farmers received considerable government support for their irrigation activities, such as subsidized infrastructure and water rights recognised under the prevailing laws. Infrastructure developed to meet these needs was concentrated in areas dominated by white people, creating further disparity with Black people (Tempelhoff, 2017; Klug, 2021). During the 1950s, the government also developed irrigation schemes within

homelands, created as concessions by the apartheid government to keep Black people from migrating into the cities (Tempelhoff, 2017).

Riparian rights were applied to water appurtenant to land; in other words, land owners had rights over the water that flowed over their land. Over time other water uses began to materialise due to growing demands from industry, mining, and urban development. In response, the 1956 Water Act (which repealed the narrowly focused 1912 Irrigation Act) broadened the scope of governance by creating government control areas alongside riparian rights. Enforced mainly in the "white only areas," it aimed to ensure that irrigation development was balanced with providing water for other activities such as mining and industry. Through this Act, the State consolidated control over public water resources, alongside private water[1] rights (including riparian rights) that also applied to groundwater (Tempelhoff, 2017; Klug, 2021).

Statutory law was not applied in former homelands or communal areas, except in Government Water Control areas and government-owned irrigation schemes. On communal land, customary water tenure was the dominant legal system presided over by traditional authorities, and it seemingly played no role in the development of statutory water law in South Africa (Thompson, 2006).

Water Management and Tenure in the Former Homelands

Close to 70,000 ha of communal areas of Limpopo Province are informally irrigated (van Koppen et al., 2017), including using a hose pipe to tap into a nearby stream, shallow well, or wetland (Figure 12.2). Such informal irrigation is largely self-financed with no direct government involvement and is thus invisible to government when identifying areas under irrigation and formulating policy (van Koppen et al., 2017). Definitions of irrigation often exclude certain irrigation activities such as carrying water with a bucket, while conventional irrigation technologies are typically the focus of policy discussions (Venot et al., 2021). During this research, small-scale farmers were using this type of irrigation on plots ranging in size from 0.5 ha to 4 ha.

While customary tenure is prevalent in communal areas, customary water law is not explicitly recognised within statutory law (Murombo, 2021). This means that the water rights of farmers who have been irrigating their land are not adequately provided for under the National Water Act (NWA)

Fig. 12.2 Hose irrigation on a small-scale farm near a tributary of the Sand River in the Inkomati Catchment.

of 1998. The invisibility of these water uses within regulatory frameworks to provide secure entitlements to water renders them vulnerable to exploitation and increases small-scale farmers' water insecurity. Water uses in communal areas therefore face the risk of not being accurately considered in water allocation discourses, perpetuating a dismissal of Black small-scale farmers' capabilities in terms of productively using water resources (Dube, 2020).

Of course, even given this lack of consideration, customary norms continue to evolve and people living on communal land legitimise these customary norms and laws through acknowledgement and adherence to their local norms (van Koppen, 2022). Most recently, authority over water resources management has switched from traditional authorities to municipal authorities and the catchment management agency. The impact that this move has on shaping community-based water tenure systems is an ongoing area of inquiry of this research effort.

It is important to recognise important differences among the practices of small-scale farmers, including the institutional framework applicable to their context. During fieldwork conducted in the Inkomati Catchment, three types of small-scale farmers were encountered, each with different relations to statutory water rights. First, small-scale farmers in communal areas invest in their own access to water through pumps and storage tanks. Here customary water tenure applies. Second, there are small-scale farmers in government-owned irrigation schemes where water rights (conferred during the apartheid era) are still held by the government departments. Finally, there are "emerging farmers" on land restituted (bought, or legally reclaimed) from white owners. Here water rights are either linked to the restituted land or are at times separated from the land during restitution by former white owners and traded separately, thereby prejudicing the new Black owners. This chapter considers the first two types of water rights in this complex context, which we will continue to explore in future research.

An overview of the evolution of statutes relating to water rights provides some important background.

Current Legal Framework for Water Allocation: Righting the Wrongs of the Past?

South Africa's progressive constitution was formulated to address apartheid injustices and to ensure that specific rights are protected, such as the rights to food and water, equality and non-discrimination, administrative justice and redress (RSA, 1996). These constitutional foundations have formed the basis of legislation including the 1998 NWA, which repealed earlier legislation to advance equitable access to water resources and to allow for redistribution. Overall, the success of post-apartheid South African law—including water law—in righting the wrongs of the past has been criticized, despite its widely claimed progressive nature. This is mainly because some of the provisions have not been implemented as envisaged, particularly at the local level, and, in practice, have even perpetuated inequalities in water resource allocations between HDI and HAI. The following sections explore why and show how western legal systems imposed on communal land have served to perpetuate inequalities in water access: in particular, the impact of water-use licensing and the slow implementation of compulsory licensing in entrenching administrative injustices and hampering water access for small-scale farmers.

The Impact of Compulsory Licensing

As a transitional measure, the 1998 NWA included clauses for the recognition of existing lawful uses (ELU) in the two-year period before its enactment. This allowed for water entitlements issued during previous dispensations to remain valid, which was perhaps a reasonable transition from one Act to another and may have prevented legal and administrative upheaval. However, this "sunset" provision has largely benefitted the HAIs and has remained in place almost twenty-five years after the 1998 NWA was passed.

Compulsory licensing is a process that allows the government to review all water use in a catchment and to reallocate water if necessary. It is the only tool available to legally abolish ELU in the 1998 NWA. Supporting compulsory licensing are two other processes: verification of lawfulness of the ELU and validation of the extent of the ELU. The highly consultative nature of the compulsory licensing process results in a democratised process (which arguably is in line with Constitutional rights for all), but which in practice may not yield the expected redress outcomes due to long and drawn-out contestations. In the Inkomati Catchment where this study is based, the process is only about 60 per cent complete, even though it has been ongoing since 2010 (IUCMA, 2020).

The Act also authorizes the Department of Water and Sanitation to issue water-use licences to potential water users, entitling them to access specified amounts of water. The licensing process itself is resource intensive and can take years (Kidd, 2016). The majority of Black small-scale farmers do not have the administrative capacity to engage in this process and have largely been excluded.

Regarding the continued recognition of historical water rights (i.e. ELU) the State has at its disposal the power to either "deprive" (reduce) or expropriate rights—both of which should be implemented following due process, according to the Constitution. Constitutional provisions on the limitation of rights require that rights may only be limited "to the extent that the limitation is reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom, taking into account all relevant factors" (RSA, 1996, s36). Due to water scarcity, in other words, water use should be rationally and fairly regulated.

According to comments from an unnamed Department of Water and Sanitation (DWS) national government official (Water Research Commission

[WRC], Project reference group meeting minutes, 19 May 2021), the role of compulsory licensing and indeed the National Water Act, is not to expropriate water rights but rather to limit or deprive those rights:

> The whole National Water Act is not couched on any expropriation but is couched on deprivation which is different from expropriation if you want to analyse what section 25[2] of the Constitution says.… We are implementing the National Water Act based on the limitation of rights and not on the total elimination of rights.

The use of the word "deprivation" is associated with the limitation of rights (for example, a reduced assurance of supply). Marais (2018, p. 2) defines deprivation as referring to the "state's police power to regulate the use, enjoyment and exploitation of property in the public interest, mostly without compensation." In other words, holders of water-use rights can retain their entitlements, while these rights are curtailed; for example, limits can be placed on the duration and place of exercising an entitlement. Given the historical imbalances in water access between the Black majority and white minority, expropriating (if the government budget allows) or deprivation of rights would seem the most effective means of redressing past inequities.

Licensing and Administrative Injustices

The fact that the compulsory licensing process, which entails reviewing and reallocating water resources, is still incomplete or has not been initiated in most of the country's catchments is a clear indication that it has not been a government priority. Moreover, water-use licences (WUL) as they were introduced in the 1998 NWA, were meant to equitably authorise water use post-1998. In practice, however, the licensing process itself has only perpetuated a skewed distribution of water towards white applicants. Further, national data show that the ratio of ELU to WUL is 4:1 (Hydrosoft Institute, 2021) indicating a slow progression in the conversion of ELU to WUL and a lower number of WUL applicants compared to ELU authorisations post-1998.

The water-use licensing process had hitherto faced delays and backlogs resulting in applicants lodging complaints against the DWS due to the lengthiness of the process, which impacted economic productivity. While the new administrative speedup of the licensing process[3] is a commendable move and

likely to benefit many have who been stuck with an un-adjudicated licence application, from an equity perspective care must be taken to ensure that due process is not compromised to benefit "economic productivity" while prejudicing the small water users. It is up to the state department to decide within its powers what constitutes high impact and for whom.

A potential pitfall for swift adjudication of licence applications means allocable water may be quickly allocated to HAIs at the expense of current and future uses of HDI. This highlights the urgent need to render HDIs' water uses visible and protected, and realise how today's allocations shape future allocation for this vulnerable group. According to Dube (2020), there is a widely held perception among the elites that Black users do not use water productively and need only a very small volume of water. She terms this "deficit thinking" where it is assumed that Black people do not need large volumes of water anyway and therefore the water can be allocated to the supposedly more economically productive, largely HAIs.

Water-use licences have been presented as an economic enabling tool as opposed to a redistributive tool and as such have been used by HAIs to amass water supposedly with the intention of creating employment and sustainable development.

Legal Attempts to Ensure Water for Small-Scale Farmers

The majority of Black small-scale water users are provided for through legal exemptions for what are termed *de minimis* or minimal uses. Van Koppen (2007, p. 56) describes these uses as "second class," which are given a "status of being negligible and invisible by design for the mere reason—not their own fault—of not being administrable." These *de minimis* exemptions are gazetted as schedule 1 uses, which include basic domestic and household non-commercial uses. If a water use exceeds schedule 1 yet is below licensing requirements, a general authorization (GA) licensing exemption applies.

Farmers using more than the set GA threshold, which varies according to catchment conditions, need to obtain a licence. In "water stressed" catchments this GA threshold can be as low as 0.3 ha equivalent (or 2000 m^3),[4] an area which in some cases is smaller than the average areas cultivated by small-scale farmers. However, because licensing is largely administratively inaccessible to the majority Black water users, this renders all water use above the GA threshold illegal. The administrative process is prohibitively

bureaucratic, with several technical requirements and assessments demanded from the applicant. The majority of Black small-scale water users are therefore administratively discriminated against as they do not fully grasp or have the means to fulfill these requirements.

The South African Government indeed recognizes how the licensing system excludes the majority of South Africans. The National Water Resources Strategy 2 (NWRS, of 2013) states that "mechanisms that reduce the administrative burden of authorising water use must be implemented. Current processes are often costly, very lengthy, bureaucratic and inaccessible to many South Africans" (DWA, 2013, p. 48). This concession by the DWS thus constitutes an administrative injustice according to s33 of the South African Constitution on just administrative action. Van Koppen (2007) has criticized the adoption of permit systems in unequal environments such as the Inkomati. She argues that permit systems boil down to the formal dispossession of water for the rural, informal water users who manage their water under community-based arrangements.

Another provision in the NWA of 1998 establishes the Ecological and Basic Human Needs Reserve, which is the only specific right to water included within the NWA. It is central in the legally binding South African NWRS, which establishes the Reserve as the country's first and utmost water allocation priority. This means that before any other allocations are made, ecological and people's basic water needs must be met. It is important to note that the Basic Human Needs Reserve is based on a minimum of 25 litres of water per person per day, which may meet the World Health Organisation (WHO) minimum quantities for domestic use but is insufficient for other equally essential uses such as irrigation and livestock watering, vital in rural contexts.

Despite the potential that the Basic Human Needs Reserve may have in redressing water access inequalities, its practical implementation has fallen short—even at the minimal quantities. In the Sabie-Sand sub-catchment of the Inkomati, it is unclear which authority or agency has responsibility for implementing the Basic Human Needs Reserve within the rivers.

However, it is precisely this human-rights-based approach for prioritisation of water use that is meant to protect those in communal areas as well as other marginalised groups, such as farm workers (Marcatelli, 2018). Moreover, this equity orientation is supported further by the NWRS 2 prioritization of poverty eradication as a basis for water allocation (DWA, 2013). The aim of poverty eradication is to improve livelihoods and advance racial

equity in areas where poverty is endemic, such as former homelands. While the NWRS is a legally binding document according to the NWA, there has not yet been significant change in practice with respect to how water allocations are distributed.

Field Observations and Findings

Policies are only as effective as their implementation. Based on our participatory research with small farmers—HDIs—in the Inkomati Catchment, this section provides field insights into how policy efforts for redress and legislative tools have translated in local practice. In the villages discussed here, small-scale farmers with plot sizes ranging from 0.2 ha to 4 ha were interviewed by the first author, most living in the upstream and downstream reaches of the catchment. The bulk of the farmers fall within the GA category (no more than 2000m^3/annum of surface water). During interviews, only one farmer acknowledged having a form of authorisation for his water use of more than 2000m^3, likely a GA; while he knew the name of the official who told him about it, he was not well informed about its details.

In the upstream parts of the catchment where the Sand River originates, one community has taken water supply matters into their own hands and collectively brought water through gravity-fed pipes into their village and homes. Here, water is used for both domestic and irrigation water supply, illustrating the inapplicability of separating domestic water from other water uses in the rural setting. This water is not regulated by the municipality and villagers maintain their pipe system collectively through a committee that they set up for this and other community related issues. This water use is, however, not licensed and the local water resource management agency (IUCMA) has neither interfered nor regularised this use.

Other villages in the upstream areas have not mobilised in a similar manner to address their water issues due to distance and resource constraints. One village in particular was concerned about not being able to use the water from a nearby government-owned dam. Farmers did not know who to approach for authorisation to access this water. The dam is within their community and yet they have no access to the resource. Nonetheless, the dam supplies irrigation water to government-owned irrigation schemes in the midstream and downstream reaches of the catchment. Water rights for this water use are held by the Department of Agriculture, which has absolute control over

these water rights as conferred during the apartheid government. Farmers in these irrigation schemes are largely concerned with maintaining irrigation infrastructure and less about ownership of water rights—since the water is provided to them anyway through the government irrigation project.

Preliminary interviews in the upstream and downstream parts of the catchment raised questions about the role of traditional authorities and their legitimacy in managing water allocations. Communities were dissatisfied with how these authorities have shifted focus from their traditional role of protecting the community's natural resources to one of making money off selling land parcels. Nonetheless, there are instances where their involvement has been useful such as in conflict resolution between HDIs over water uses. As a result, taking into account how they now function in democratic South Africa, it seems that the role of traditional authorities in equitable water allocation needs further exploration.

None of the farmers interviewed were registered water users, as per the statutory requirement. Farmers had no knowledge of the registration process or what was needed. Their water use thus remains invisible in government water allocation and planning processes. In a context where customary water laws are not explicitly recognized within statutory law, these water uses are overlooked and become vulnerable to having their water rights usurped by third party users, for example holders of a higher ranked water-use licence. Redistributing more water through, for example, expropriation of apartheid-era water rights, will free up much needed water to allocate to small-scale users and perhaps also warrant a raising of the GA threshold.

Discussion and Conclusion

South Africa's history of dispossession has shaped post-apartheid legislative reform in three ways. First, the South African legal terrain has always been pluralistic in nature due to the numerous cultural and religious influences that define the political landscape. However, even within such a pluralistic environment, a dominant legal system is widely implemented. Van Koppen and Schreiner (2019) show how water permitting systems—implemented through statutory water law with colonial foundations—have worsened water insecurity for small-scale users in five African countries including South Africa. They advocate a "hybrid" legal system that considers customary norms and is tailored to specific users.

Van Koppen and Schreiner (2019) argue that permit systems adopted from the Western ways of managing water do not translate well to local contexts in Africa where customary laws are upheld. As such, permit systems have been used as a tool to continue the disempowerment of Black water users by colonialists. As water permits or licences are largely inaccessible to the rural Black majority, they have been used by the white elite to amass water rights at the expense of future and current water use for the vulnerable Black majority in the communal areas. If more water was to be made available for uptake by this majority through more efficient water use and management (reduced wastage and losses, new dams, aquifer protection, etc.), equity considerations and due diligence in licensing, then some equity in allocation could be achieved.

Secondly, while customary laws are recognised in the South African Constitution, customary water laws are not explicitly recognised in the NWA of 1998. This results in a weaker recognition of customary water laws, since they often derive legitimacy from existing statutory laws (Murombo, 2021).

Third, the skewed distribution of infrastructure, and thus entitlement to stored or piped water, is an important aspect in understanding water access inequalities. In the Inkomati there are four dams in the Sabie-Sand sub-catchment that were constructed to serve government-owned irrigation schemes for Black farmers. However, other farmers who live in proximity to this state-owned infrastructure but outside of the irrigation schemes do not have a right to the water. Water management planning practices implemented during the apartheid era continue to be upheld, which disempowers small-scale farmers in the communal areas who are not operating within the formal structures of government irrigation schemes and creates tiers of inequity. Reopening discussion of government water rights along with improved implementation of the NWA and NWRS would help to address these inequitable inefficiencies.

In conclusion, the critical role of legislation and water allocation regulations in empowering small-scale farmers to attain equitable access to water is irrefutable. As our research shows in the unequal communal areas of the Sabie-Sand sub-catchment, water security for HDI communities requires integrating communal and customary governance systems with property rights and greater legislated water access.

NOTES

1 In the 1956 National Water Act, private water was defined as "water which rises or falls naturally on any land or naturally drains or is led on to one or more pieces of land which are the subject of separate original grants, but is not capable of common use for irrigation purposes" (RSA, 1956).

2 Section 25 of the 1996 South African Constitution deals with the property clause as regards deprivation, expropriation, and compensation. Water rights are considered as property rights in this respect.

3 A turn-around time of 90 days for water use licensing was emphasized by the president in 2022 during a State of the Nation address. https://www.gov.za/speeches/president-cyril-ramaphosa-2022-state-nation-address-10-feb-2022-0000

4 Irrigation water use is measured in volume per hectare equivalent, especially under Existing Lawful Uses.

Reference List

Calow, R., & Mason, N. (2014). *The real water crisis: Inequality in a fast-changing world*. Overseas Development Institute.

Couto, R.A. (1987). Participatory research: Methodology and critique. *Clinical Sociology Review*, *5*(1), 9.

Denby, K., Movik, S., Mehta, L., & van Koppen, B. (2016). The "trickle down" of IWRM: A case study of local-level realities in the Inkomati Water Management Area, South Africa. *Water Alternatives*, *9*(3), 473–492.

Dube, B. (2020). Deficit thinking in South Africa's water allocation reform discourses: A cultural discourse perspective. *Journal of Multicultural Discourses*, *16*(4),293–312. https://doi.org/10.1080/17447143.2020.1835926

DWA (2013). *National water resources strategy 2*. Pretoria, South Africa Department of Water Affairs.

FAO (Food and Agriculture Organization). (2020). *Unpacking water tenure for improved food security and sustainable development*. Land and Water Discussion Paper 15s. Rome. https://doi.org/10.4060/cb1230en

Hofstetter, M., van Koppen, B., & Bolding, A. (2021). The emergence of collectively owned self-supply water supply systems in rural South Africa–what can we learn from the Tshakhuma case in Limpopo? *Water SA*, *47*(2), 253–263.

Hydrosoft Institute (2021). *Decolonising water access and allocation: A renewed effort to address persistent inequalities in the water sector.* Water Research Commission Report, Project No. K5/2858.

IPCC (Intergovernmental Panel on Climate Change). (2021). *Regional fact sheet—Africa: Sixth assessment report: Working Group 1—The physical science basis*. Retrieved on 20 January 2023, from https://www.ipcc.ch/report/ar6/wg1/resources/factsheets/x

IUCMA. (2020). *Inkomati-Usuthu Catchment Management Agency annual performance plan 2020/2021*. 1 April 2020–31 March 2021.

Khalil, C.A., Conforti, P., Ergin, I., & Gennari, P. (2017). *Defining small-scale food producers to monitor Target 2.3 of the 2030 agenda for sustainable development*. Food and Agricultural Organization of the United Nations (FAO).

Kidd, M. (2016). Compulsory licensing under South Africa's National Water Act. *Water International*, *41*(6), 916–927.

Klug, H. (2021). Between principles & power: Water law principles & the governance of water in post-apartheid South Africa. *Dædalus*, *150*(4), 220–239.

Marais, E.J. (2018). Narrowing the meaning of "deprivation" under the property clause? A critical analysis of the implications of the Constitutional Court's Diamond Producers judgment for constitutional property protection. *South African Journal on Human Rights*, *34*(2), 167–190.

Marcatelli, M. (2018). The land-water nexus: A critical perspective from South Africa. *Review of African Political Economy*, *45*(157), 393–407. https://doi.org/10.1080/03056244.2018.1451318

Mukuyu, P., van Koppen, B., & Jacobs-Mata, I. (2021). *Inventory and analysis of water use practices and regulations in Inkomati: Deliverable 3 to the Water Research Commission on the Operationalizing Hybrid Water Law for Historical Justice Project* [Unpublished report].

Murombo, T. (assisted by Seme, N.). (2021). *Recognition of customary water rights in South African legislation* [Draft working paper prepared for International Water Management Institute (IWMI) as part of PIM 5.1.1 project "Recognizing customary water tenure in hybrid water law: legislative and local perspectives" and paper presentation]. Water Institute of Southern Africa's (WISA) Biennial Conference and Exhibition 2020, online.

RSA (Republic of South Africa). (1996). The Constitution of the Republic of South Africa.

RSA (Republic of South Africa). (1956.) Water Act, No. 54 of 1956. Repealed.

Tempelhoff, J. (2017). The Water Act, No. 54 of 1956 and the first phase of apartheid in South Africa (1948–1960). *Water History*, *9*(2), 189–213.

Thompson, H. (2006). *Water law: A practical approach to resource management and the provision of services*. Juta and Company Ltd.

UNDP (United Nations Development Programme). (2006). *Human development report 2006*: *Beyond scarcity: Power, poverty and the global water crisis*. Palgrave Macmillan.

Van Koppen, B. (2007). Dispossession at the interface of community-based water law and permit systems. In B. van Koppen, M. Giordano, and J. Butterworth (Eds.), *Community-based water law and water resource management reform in developing countries* (pp. 46–64). CABI International.

Van Koppen, B. 2022. *Living customary water tenure in rights-based water management in Sub-Saharan Africa*. IWMI (International Water Management Institute) Research Report 183. https://doi.org/10.5337/2022.214

Van Koppen, B., & Schreiner, B. (2019). A hybrid approach to statutory water law to support small-scale farmer-led irrigation development (FLID) in Sub-Saharan Africa. *Water Alternatives*, *12*(1), 146–155.

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 (International Water Management Institute) Working Paper 174. https://doi.org/10.5337/2017.206

Van Koppen, B., Molose, V., Phasha, K., Bophela, T., Modiba, I., White, M., Magombeyi, M.S., & Jacobs-Mata, I. (2020). *Guidelines for community-led multiple use water services: Evidence from rural South Africa*. IWMI (International Water Management Institute) Working Paper 194. https://doi.org/10.5337/2020.213

Van Koppen, B., Schreiner, B., & Mukuyu, P. (2021). Redressing legal pluralism in South Africa's water law. *The Journal of Legal Pluralism and Unofficial Law*, *53*(3), 383–396.

Vaughn, L.M., & Jacquez, F. (2020). Participatory research methods—Choice points in the research process. *Journal of Participatory Research Methods*, *1*(1). https://doi.org/10.35844/001c.13244

Venot, J.P., Bowers, S., Brockington, D., Komakech, H., Ryan, C.M., Veldwisch, G.J., & Woodhouse, P. (2021). Below the radar: Data, narratives and the politics of irrigation in sub-Saharan Africa. *Water Alternatives*, *14*(2), 546–572.

Von Fintel, D., & Pienaar, L. (2016). *Small-scale farming and food security: The enabling role of cash transfers in South Africa's former homelands*. Institute for the Study of Labor, Discussion Paper Series Report no. IZA DP No. 10377.