www.water-alternatives.org Volume 13 | Issue 2

Sadiki, A. and Ncube, B. 2020. Challenges of accessing water for agricultural use in the Breede-Gouritz Catchment Management Agency, South Africa. Water Alternatives 13(2): 324-346

Challenges of Accessing Water for Agricultural Use in the Breede-Gouritz Catchment Management Agency, South Africa

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ABSTRACT: Agricultural water is not equitably shared in South Africa. A substantial proportion of water is in the hands of large commercial farmers and the water access of smallholder farmers is limited. Policies and strategies developed since 1994 to ensure equal access to productive water have had little impact. This paper presents an analysis of the challenges of accessing water through the water user licence process in the Breede-Gouritz Catchment Management Agency (BGCMA) of South Africa. A review of the national Water Allocation Reform (WAR) programme and the related BGCMA strategies was carried out. Interviews were conducted with smallholder farmers and with key officials responsible for water allocation processes in the BGCMA and other water-related institutions; the Framework of Water Governance by Franks and Cleaver (2007) was used to analyse the processes. Results revealed that existing lawful water use continues to privilege previously advantaged commercial farmers and that smallholder farmers' access to productive water is hampered by lack of human and financial capacity within the institutions that support them, and by limited coordination among these institutions. A water allocation unit at the BGCMA that specifically deals with water licencing is necessary to speed up the process and to enable local people to inclusively participate in water resource management.

KEYWORDS: Water Allocation Reform, water user licence, smallholder farmers, access, South Africa, water governance

INTRODUCTION

Access to natural resources, including water, varies greatly in South Africa. The unequal distribution of resources is embedded in the history of the country. Under Dutch law in the 17th and 18th centuries, all resources were under the control of the state. In the early 19th century, the British occupied the country and introduced free land tenure and riparian laws (Backeberg, 2005); this meant that water and other natural resources that were on, or part of, a piece of land belonged to the owner of that land. The *Water Act No 54 of 1956* focused more on supporting wealthy commercial farming and the industrial sectors than alleviating poverty in the less privileged rural areas (DWAF, 1998). After the election of the democratic government in 1994, there was an immediate need to redress past inequalities. The National Water Policy White Paper (1997) paved the way for the development of water legislation. The *National Water Act No. 36 of 1998* was enacted in order to introduce management of water resources according to the principles of sustainability, equity and efficiency. South Africa became the first African country to adopt national water legislation aimed at transforming its society in the direction of social and environmental justice (Schreiner and van Koppen, 2002). Since the promulgation of the National Water Act (NWA), the principle of equity has not seen much success, as it provided no detailed strategies or

approaches for the promotion of equity (DWAF, 2004). According to Mehta (2006), many countries, including the Andean states, have made equity a goal in their water policies without making clear what exactly equity is (Syme et al., 1999). As a result, water allocation remains skewed in favour of those who have the ability and means to use water to produce the greatest economic returns (Mehta, 2006; Kemerink et al., 2011; Roa-García, 2014), leaving smallholder farmers with little or no access to water for agricultural use.

In 2004, the Department of Water Affairs and Forestry (DWAF) developed the first edition of the National Water Resource Strategy (NWRS1) to support the Water Allocation Reform (WAR) programme (DWAF, 2004). The NWRS1 was a guiding framework for water resource management; it was reviewed about every five years and amended to suit changing circumstances. The first review of the NWRS1, however, showed that its central objectives of supporting equitable and sustainable social and economic transformation and development had not been achieved (DWA, 2013); the Water Allocation Reform strategy was therefore published in 2008. Long term and short term targets were set for the implementation of WAR as a stepping stone towards the realisation of the goals of the NWA. The national target was to allocate 45% of water to Blacks by the year 2019 and 60% by the year 2024 (DWAF, 2008). To ensure that water was made available to the historically disadvantaged, the second edition of the NWRS2 (2013) was developed around the principle that special attention should be given to the needs of those who have historically been denied access to water. Despite this, however, there are still obstacles in realising the equity goal; these stem from the continued lack of support for smallholder farmers in their attempts to access water for productive use (DWA, 2013).

The NWA aimed to promote equity, sustainability and efficiency through the decentralisation of water resources management; this decentralisation was to take place via catchment management agencies (CMAs) and water user associations (WUAs) at the local level, which would administer water user rights through registration and licencing. The administration of water use as outlined in Section 22 of the NWA includes: i) Schedule One, which allows anyone to take small amounts of water from the water resource without requiring a licence; ii) General Authorisation (GA), which allows the use of larger volumes of water over and above Schedule One use, but with minimum impact; and iii) existing lawful use (ELU), which allows for the legal continuation of water use in terms of the 1956 ("old") Water Act.

The first CMAs to be created were the Breede-Gouritz Catchment Management Agency (formerly the Breede-Overberg CMA) and the Inkomati-Usuthu CMA (formerly the Inkomati CMA) (DWA, 2012). The strategy of the Breede-Gouritz Catchment Management Agency (BGCMA) prioritised programmes to promote water allocation to smallholder farmers through the Department of Water and Sanitation (DWS) subsidies and to grant licences for agricultural water use. In the 2010/11 financial year, the BGCMA reported that smallholder farmers had accessed only 2 to 5% of the available water; the BGCMA, therefore, decided to increase water allocation for agricultural use to smallholder farmers to 15% by the year 2015 (BOCMA, 2010, 2012). The 2014/15 annual report, however, indicated that only 22 water user licences had been granted to smallholder farmers (BGCMA, 2015); by 2016/17, about 80% of applications for water use licences had been finalised, but there was no indication of how many of these were for smallholder farmers. It is unclear what the current status is, but White commercial farmers continue to hold a strong position in terms of access to land, water, labour, knowledge and financial means (Wessels et al., 2019). It also remains unclear why equitable water allocation to smallholder farmers is taking so long to achieve. This paper presents a review of the policies and strategies developed to enable access to water for smallholder farmers. The study assessed the challenges faced by the BGCMA in allocating water to smallholder farmers and explored the challenges faced by smallholder farmers in accessing productive water through the water user licencing process.

FRAMEWORK OF ANALYSIS

South Africa is a water-scarce country receiving about 450 mm of rainfall per annum compared to the global yearly average of 870 mm. The country is rated the thirtieth driest country in the world with a projection that 98% of its water resources have already been exploited (DWA, 2012, 2013). Previous studies indicate that there is enough water to meet all the country's needs until 2025; limited resources and organisational capacity, however, could result in an increase in water scarcity if the right decisions are not taken and implemented at the right time (Muller et al., 2009). South Africa is a democratic country where equality of water allocation is a priority and where decisions are made specifically to address past inequalities (Merrey, 2011); water management, however, is still a challenge throughout the country (Merrey, 2011; Kidd, 2016). Despite the existence of the comprehensive policy and strategy instruments, there seems to be a lack of momentum in the implementation of water allocation reforms (Seetal and Quibell, 2005; Movik and de Jong, 2011; Kidd, 2016). The Framework of Water Governance (Franks and Cleaver, 2007) was used to assess South Africa's water allocation policies and strategies; it examined how these policies and strategies are understood by the BGCMA, by other water-related institutions, and by smallholder farmers.

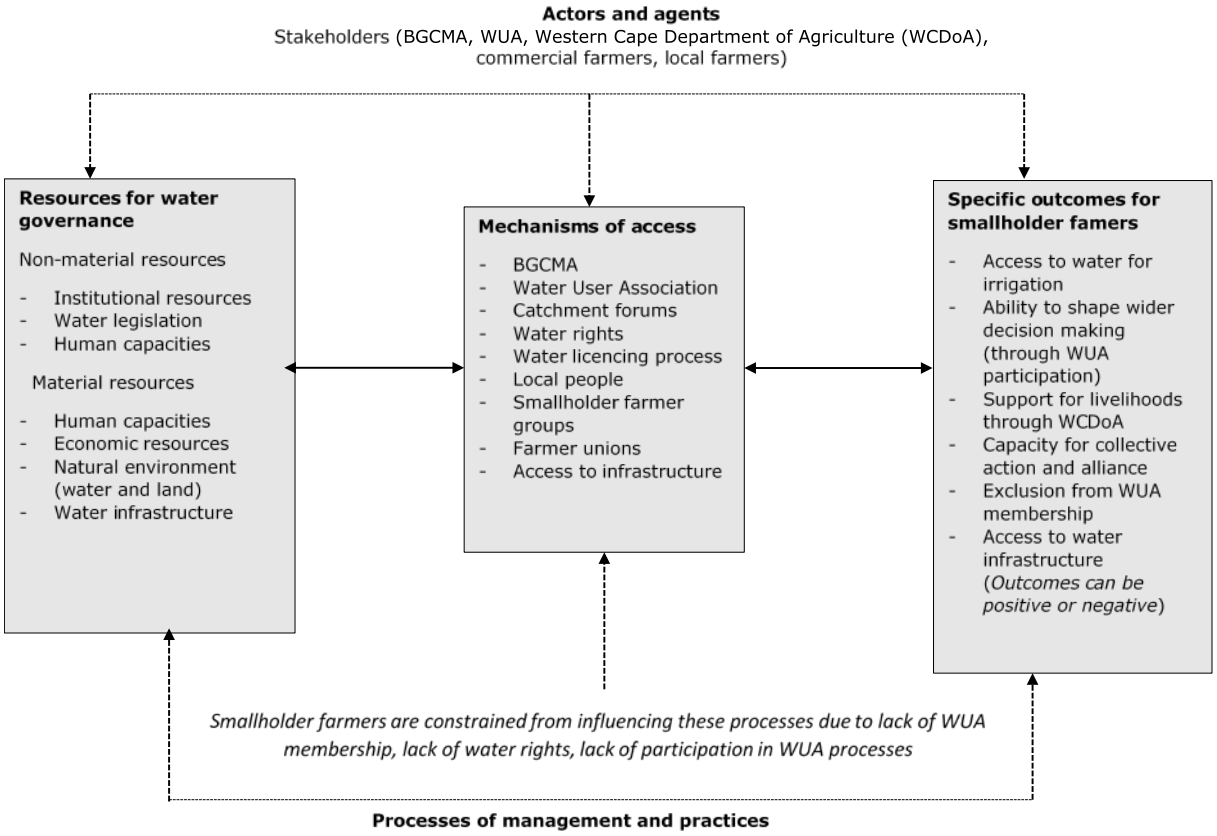
Governance is defined as the organisation of social affairs through the interaction of state, private sector and civil society; it is anchored in a system of values, policies and institutions by which a society manages its economic, political and legal rights and obligations (Sudders and Nahem, 2004). The governance concept is comprised of a range of systems; these systems are interlinked through political processes that are used in the management of resources, including water (Franks, 2004). Hill (2012) defines governance as a standard that encourages government departments and society to work together to achieve political goals. The study, therefore, has adopted the Framework of Water Governance (Figure 1) as it influences the interconnections between policy, organisation and society.

Allocative resources are defined as *material resources involved in the generation of power*; in this case, it refers to the resources around water management including institutions, human capacity and material resources such as water storage infrastructure. Mechanisms of access include the *processes by which water access is negotiated and shaped within various governance arrangements*; in this study, governance arrangements include the processes followed by the BGCMA and by water user associations (i.e. policy, strategic, and legislative instruments) and any local arrangements by farmers' unions and other groups. These resources are driven by *actors and agents (stakeholders)* which in this study include the BGCMA, the Western Cape Department of Agriculture (WCDoA), and commercial and smallholder farmers. The processes involved in the mechanisms of access may produce either positive or negative outcomes in access to water by smallholder farmers (Franks and Cleaver, 2007). In this study, the focus was on the policies and strategies developed to enable smallholder farmers to access water, the challenges faced by the BGCMA in allocating water to the smallholder farmers, and the smallholder farmers' access to water for productive use (irrigation) through the water user licencing process.

METHODOLOGY

A desktop policy and strategy review were conducted in order to identify the mechanisms and challenges of providing access to agricultural water to smallholder farmers in South Africa. Figure 2 shows the hierarchy of water resource management and water services provision in South Africa. The focus of the study was on the institutions that provide water for agricultural (productive) use (the areas inside the broken-line border in Figure 2).

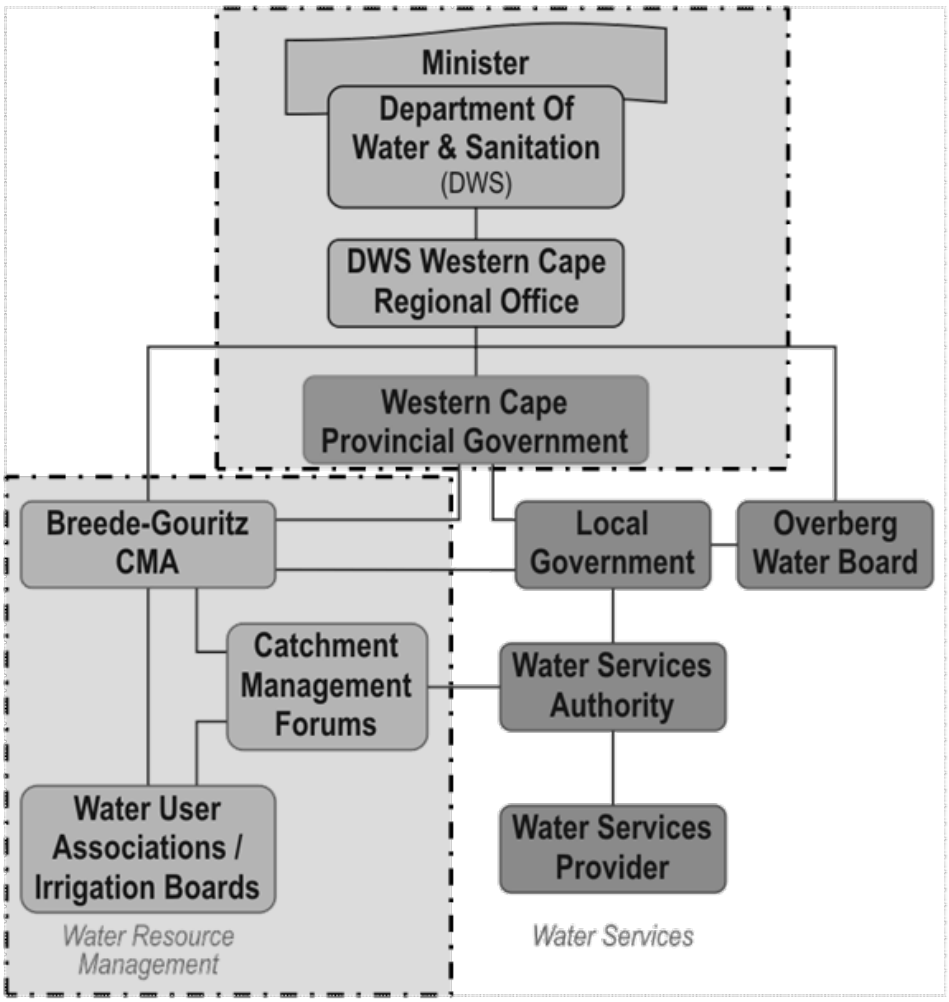
Figure 1. Framework of Water Governance



Adapted from Franks and Cleaver (2007).

The desktop review was followed by eight key informant interviews. Five people within the BGCMA were interviewed; these included the Chief Executive Officer (CEO), Institutional & Stakeholder Relations Manager, Water Use Specialist (Acting) and two Water Use Officers. The WCDoA and the Groenland WUA officials were also interviewed about their experiences of the water user licence application process. They were asked how they implemented the water allocation programme and what were the specific outcomes; the interviewees were also asked about organisational coordination and the challenges they faced in implementing the policies and strategies. In addition, ten non-WUA and two WUA smallholder farmers were interviewed on their farming background, the type of agricultural practice they followed, the source and quantity of water to which they had access, their understanding of water policy, the organisations they received support from, and the challenges they faced in accessing water through the water user licencing process. The study was restricted to water allocation for agricultural use in the BGCMA. No members of Catchment Forums were included, however, because none of the interviewed smallholder farmers belonged to one. The interviewed farmers were from Botrivier, Genadendaal, Grabouw/Elgin, Robertson, Villiersdorp and Worcester. The interviews were conducted in July and August, 2018.

Figure 2. Water management institutions in South Africa showing links with BGCMA.



Source: BGCMA (https://breedegouritzcma.co.za/).

The interview audios were transcribed and uploaded into Atlas.*ti* 8.1 Windows. The information was then proofread by the authors to allow them to familiarise themselves with the data and to generate initial codes. Codes were generated according to the coding, thematic and categorical methods described by Miles and Huberman (1994); different codes were then reviewed and sorted into potential themes. According to Miles and Huberman (ibid) and Gibbs (2007), coding is commonly used in qualitative research because it is flexible and allows for revision and the assigning of new and multiple codes. It also enables a holistic analysis as it allows for the combination of related codes which can then lead to larger concepts and an analysis of their interrelationships. The responses from officials and farmers were analysed in order to understand the challenges faced by the officials in allocating water and by the farmers in accessing water for agricultural use. The responses from the interviews and the codes generated were grouped into themes in order to visualise relationships and identify trends in the data. The report was then generated and the data was interpreted in narrative form directly from individual responses. This research was part of a larger research engagement with the BGCMA which began in early 2014 and lasted until the end of 2019. The findings from this research were therefore triangulated with the data collected from similar published and ongoing studies conducted in the study area, including studies and projects by Ncube (2018a, 2018b). Engagement with farmers and with the BGCMA also

provided opportunities to triangulate and validate some of the findings. Between 2016 and 2019, the second author facilitated 11 farmer-information 'roadshows' with smallholder farmers and officials in the BGCMA. These roadshows were held in World Café style, where officials circulated among small groups of farmers explaining their official function and outlining the support available to the farmers; farmers, in turn, asked questions. A log was compiled of the issues and problems raised by farmers and these were compared with the issues raised by farmers in the study area. Follow-up meetings after the roadshows enabled the gathering of more feedback and also allowed the researchers to further triangulate and compare their findings. Some of the challenges were also directly experienced and observed by the second author in the course of the previous six years of working with farmers and officials in the BGCMA. Where further clarification was needed, follow-up phone calls were made to some of the officials and smallholder farmers.

RESULTS

The national Water Allocation Reform process

The main aim of developing the South African Water Allocation Reform strategy was to formulate targets which would ensure that the vision of the NWA was realised (DWAF, 2008). The Compulsory Licence (CL) process, Set-Asides and General Authorisation (GA) were the mechanisms proposed to make water available for uptake by smallholder farmers (DWAF, 2008); however, there were obstacles in the way of these mechanisms being taken up. Exacerbating the inequality in access to water was the Existing Lawful Use (ELU) provision which sought to bridge the previous and current water acts. The principle allowed for the existing water users to continue for two years before the commencement of the NWA, and for their ELU status to be replaced in due course with a licence (Anderson et al., 2007). According to Movik (2014), the new water law could not be introduced immediately considering that White commercial farming was the mainstay of the South African economy; as a result, existing lawful water rights were to remain legal until converted to a Compulsory Licence (Kidd, 2016). Unfortunately, this issuing of CLs has not happened and most water use is still taking place under the provisions of the ELU clause (Schreiner and van Koppen, 2020).

The GA was issued in 1999 and 2004 by the Department of Water Affairs (DWA), but was only applicable in various water-stressed catchment areas. It was initially proposed as a temporary licence to help alleviate the administrative burden associated with the granting of water use authority to individuals. The GA allowed for the use of water – without observing some of the rules such as paying, conducting certain water measurements and registration – by a specific group of people in a particular geographical area for a specified activity (van Koppen and Schreiner, 2014b). Schreiner et al. (2010) describe the GA as a way for the DWA to allow for the use of a volume of water greater than what is permitted by Schedule One, without the requirement of a water use licence. The GA was seen as an advantage to support the WAR programme (van Koppen and Schreiner, 2014b). The policy has recently been revised to reduce the amount of accessible water, a change which impedes the transformation of the water sector (Vermeulen, 2018) and which thus also affects smallholder farmers (ibid). The GA was also a way to support compulsory licencing if an area was identified for potential development (Anderson et al., 2007). Smallholder farmers are not required to hold legal papers to have a GA; however, the lack of a GA document hampers the application process when a farmer applies to a bank such as the Land Bank for a loan to expand production. The bank must spend time and money verifying the farmer's water resource which they would not need to do if the farmer held an appropriate letter confirming the GA (van Koppen and Schreiner, 2014b).

Compulsory licencing is a tool which was aimed at promoting the reallocation of water resources in water-stressed catchments in South Africa (DWA, 2013). In this process, all existing water users must voluntarily give up their water rights and reapply, along with other potential users, for a licence to

continue to use water within a specified area (NWA, 1998); it is a process which places a significant administrative burden on the national DWS (Anderson et al., 2007; Movik and de Jong, 2011; van Koppen and Schreiner, 2014a). Concern has been raised that compulsory licencing alone cannot achieve equity in access to water as smallholder farmers may not have the capacity to participate in the process. Even though the compulsory licencing process has been slow, some licences have been transferred to smallholder farmers (Movik and de Jong, 2011). In some provinces, no licences were issued to smallholder farmers between 1998 and 2008 because applications exceeded the available supply (Msibi and Dlamini, 2011). In the case of Limpopo Proto CMA, 78 licences had been granted by 2008, which was the highest number of licences for irrigation released in any of the provinces (DWAF, 2008; Msibi and Dlamini, 2011); it remained unclear, however, in areas where there were still severe backlogs in the processing of water licence applications, the possible impacts on water-using industries remained unclear (de Jong and Movik, 2011; Mandlana and Lamola, 2016). According to Schreiner and van Koppen (2020), out of an estimated 160,000 households requiring water permits, by 2016 only 5956 permits had been issued to rural households in the whole of South Africa.

For some time, WAR has been facing pressure to demonstrate progress. Since compulsory licencing has been considered the central pillar of WAR (Movik, 2009), an approach was developed to measure progress in the allocation of water to smallholder farmers. A pilot study to test the progress of compulsory licencing was done in Jan Dissels, Mhlathuze and Inkomati-Usuthu CMAs (Anderson et al., 2008; Movik and de Jong, 2011; Msibi and Dlamini, 2011). The process was found to be very slow and similar challenges were discovered in all of the CMAs: lack of financial resources, lack of skills and training in a specified field of work, lack of access to resources in areas where resources need to be utilised, and lack of cooperation and understanding between the national DWS and the regional offices.

In November 2019, the DWS launched the National Water and Sanitation Master Plan (2018), which is described as a plan of action that needs to be implemented by the entire water sector in South Africa in order to achieve the government's goals and objectives. The plan acknowledges that only 5% of agricultural water is used by black farmers and that the pressure to reallocate water to achieve more equitable water use remains high. The supporting actions that were designed to address this problem – besides the current General Authorisations – include identifying areas where small dams or groundwater development can provide water for small scale black farmers; it remains to be seen, however, whether this will be enough to benefit smallholder farmers given the past challenges. Some water experts feel that "there is no guarantee that South Africa will become water secure without a combination of research, the ability to apply knowledge, secure human capital that offers functional leadership and management, and without an educated public" (Winter, 2019).

Water Allocation Reform in the Breede-Gouritz Catchment Management Agency

The BGCMA was guided by the development of a national Catchment Management Strategy (CMS) that was suitable for its area of jurisdiction (BOCMA, 2009, 2012). The CMS guides water resources management in such a way as to redress social inequality, giving priority to water reallocation (BOCMA, 2010; BOCMA, 2012). The BGCMA, guided by the NWA, followed various processes to implement WAR, although the implementation of some of these was complicated. Some of the responsibility for processing water user licence applications has been delegated to the BGCMA by the DWS, and some responsibilities remain with the DWS (BOCMA, 2012; Wessels et al., 2019). Lack of funds is another problem that complicates the implementation of WAR. The CMA relies heavily on the central government for funds since the revenue from water sales is not enough to sustain it. The central government's late release of funds delays the implementation of some aspects of the projects on the ground (Ncube, 2018a). Lack of water availability is another major challenge in the CMA; by 2010 almost 100% of the water in the Water Management Area (WMA) was reported to have already been allocated. Validation and verification processes were conducted in order to validate already allocated water for potential reallocation (BOCMA, 2012). Due to lack of capacity, however, water is still being used unlawfully with no prosecution (Wessels

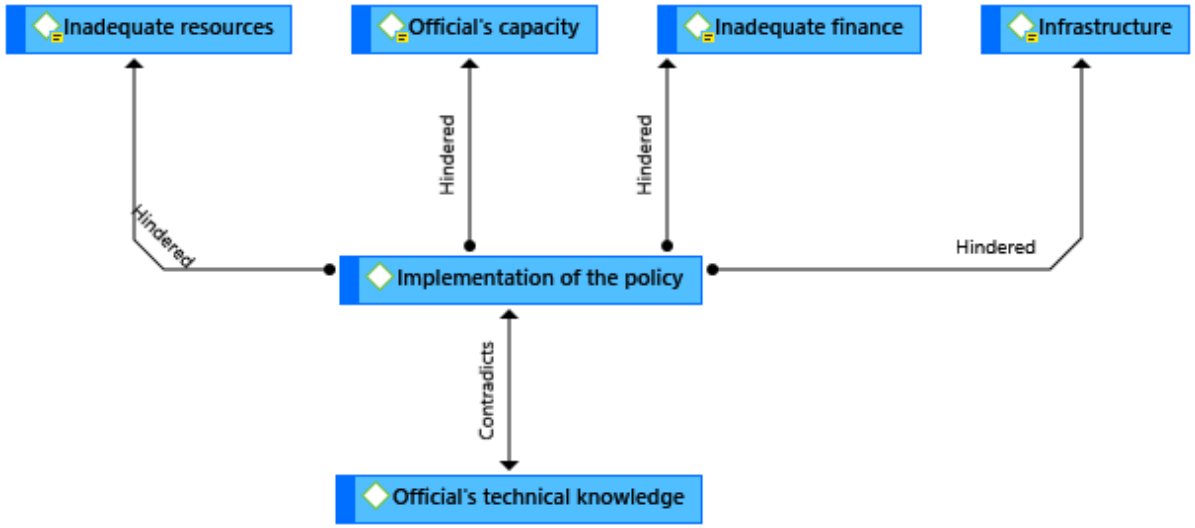
et al., 2019) and processes such as compulsory licencing which are supposed to make water available in the BGCMA have not yet yielded the intended benefits. The 2019/2020 Annual Performance Plan (BGCMA, 2019) describes the BGCMA as very water-stressed, but water allocation reform is still one of the seven strategic priorities of the BGCMA. The CMA reported 100% coverage of historically disadvantaged individuals (HDIs) and resource-poor farmers (RPF) who were technically supported in water use and received assistance in completing financial applications for government subsidies. Unfortunately, however, there are no actual figures in the report.

Challenges of water allocation in the Breede-Gouritz Catchment Management Area

Resources for water governance

Resources for water governance in the BGCMA, including financial resources, are allocated in the centrally managed DWS budget; the authorisation of the water user licence also rests with the head office. This poses challenges to the efficiency with which the BGCMA manages its functions. Figure 3 shows a relational diagram generated by Atlas.*ti* which indicates how resources affect policy and strategy implementation at the CMA level.

Figure 2. Atlas *ti* output of resources for implementing water policy in the BGCMA



Institutions that support smallholder farmers require adequate funds, human capacity and technology in order to provide the farmers with water access; they also need to have the knowledge to implement the policies (Figure 3). However, officials who expect to draw on their technical knowledge in carrying out their functions are frustrated by the lack of resources, the low level of support from the national government, and the limited infrastructure owned by the smallholder farmers. BGCMA Official No.1 indicated that the BGCMA received a subsidy to finance smallholder farmers for operations, but that the subsidy funds were limited and were often exhausted before the farmers could stand on their own feet. He reported that other government departments who cooperate within the BGCMA in giving support to smallholder farmers also have limited funds, which results in the poor success of water allocation processes. Official No. 2 indicated that although the BGCMA did allocate funds, in the 2017/18 financial year the DWS did not fund any of the applications that the BGCMA had received.

Official No. 7 indicated that the process of water allocation was hugely complicated by the lack of access to land, water and funding and by the terms of the land leases issued to smallholder farmers.

According to Official No. 1, the BGCMA formally allocated the legal right to water in the form of a licence, but it did not have control over whether the licence holder would actually be able to access water. Actual access to water by smallholder farmers required the construction of infrastructure; water could thus be allocated, but it remained up to the farmers to confront their limited ability to extract water for irrigation from its source and to acquire pumps and electricity. Official No. 1 indicated that throughout the country there was a dire lack of the resources needed to support the allocation of water adequately and equitably.

Capacity plays a major role in the water allocation process. Any water allocation decision or any referral on an application requires the decision-maker(s) to be well informed and to thoroughly understand what is needed; the WAR programme lacked this human capacity. According to Official No. 3, the problem in the BGCMA is the absence of an official or a water allocation reform unit which is delegated to deal with smallholder farmers; WAR is just one area of many. Busy officials receive applications for authorisation in the form of emails, to which they have little time to attend, especially as the appointment letters of water allocation officials stipulate that only 6% of the official's time should be spent on water allocations. The work required to make effective water allocation decisions was beyond the capacity of the officials; sometimes they were required to assist smallholder farmers in filling out water use application forms, which is even more time-consuming. Official No. 3 had assisted with the water user licence applications of 18 Robertson smallholder farmers, something that was not part of this official's duties; it required the writing of a full report which smallholder farmers then completed. According to this official, the application procedure prolongs the water allocation process. WUA smallholder farmers, by contrast, have a chairperson to assist them with it. The chairperson of the WUA (Official No. 8) was also doing a course at the University of Cape Town in order to increase his general understanding of water affairs. Assisting the non-WUA smallholder farmers was difficult; officials were expected to follow up on smallholder farmers' progress with the application process, but due to lack of follow-up some applications were in the end never submitted to the BGCMA.

Due to the lack of adequate human resources and knowledge capacity in the BGCMA, the water allocation process was not serving smallholder farmers well. Even when smallholder farmer had all the necessary resources to qualify for water allocation, they were hampered by a lack of technical knowledge on the part of officials, and some of the technical staff hired by the departments failed to make logical decisions. Official No. 3 also mentioned colleagues who were a challenge to work with and who would not go the extra mile to assist smallholder farmers to get projects done.

Mechanisms of providing access to water

The key officials interviewed had five to ten years of experience in supporting smallholder farmers in achieving access to water and other agricultural resources. Official No. 1 indicated that in order to engage with smallholder farmers the BGCMA had conducted information roadshows; it had done so in collaboration with other departments such as the Western Cape Department of Agriculture (WCDoA), the Department of Rural Development and Land Reform (DRDLR), the Central Breede River, Groenland and Hex Valley WUAs and the Land Bank. There was also involvement by other independent institutions that assist smallholder farmers in agriculture such as the African Farmers Association of South Africa. In the course of these roadshows, smallholder farmers were informed about what the BGCMA does and how officials could assist them; this project, however, was relatively new as it had only been conducted over the previous three years. Official No. 2 indicated that relationships were being established between the smallholder farmers and the BGCMA; the latter was creating opportunities to ensure that smallholder farmers were being made aware of other programmes or organisations from whom they could get support. The roadshows helped in getting the information to smallholder farmers quickly, as information would then travel further by word of mouth. Although there was no formal way to engage with all farmers, according to Official No. 3 the level of engagement was greater with the non-WUA than with the WUA smallholder farmers. Official No. 4 indicated that the BGCMA engaged with everyone who used water, not only the smallholder farmers. Official No. 5 indicated that the engagement with the

smallholder farmers happened on request, while according to Official No. 6, engagement with smallholder farmers occurred through monthly one-on-one contact visits to farms. There were also group activities on Farmers' Days and other extension activities that engaged smallholder farmers. Official No. 7 indicated that there was engagement with all types of farmers, including commercial fruit farmers, small scale grain farmers, smallholder farmers, community gardeners and households. Official No. 3 indicated that there was no prioritisation in the allocation of water; attention was based on the order in which applications were received.

Results from the interviews indicated that there were management practices and processes in place to assist smallholder farmers who were not WUA members. Smallholder farmers, however, were reluctant to apply for water user licences as they were impatient with the requests to provide information and documentation regarding water rights, lease agreements and ownership of the property, an attitude which led to delays and rejections of applications. According to Official No. 4, smallholder farmers seemed inconsiderate since they had been provided with pamphlets in their home language which explained the process and procedures for applying for water use licences. It was felt that it would be wasteful to spend time and effort to improve the organisation's policies and procedures if farmers were not empowered to make use of the material provided in order to inform themselves about the changes. The situation was different for WUA smallholder farmers, as Officials No. 1 and 2 indicated; these farmers could voice their problems in meetings and obtain help which made things easier. Official No. 6 indicated that limited literacy skills resulted in a lack of engagement by most of the smallholder farmers; it was, for example, a challenge for them to complete the application forms because of poor understanding of the legal requirements with which they had to comply in order to cultivate the land. Official No. 3 indicated that overworked officials found it difficult to prioritise the processing of water use applications. Scarce human capacity and a lack of well-defined objectives for water allocation among officials will continue to make it impossible to achieve the intended water allocation targets for smallholder farmers.

Processes and management practices for water provision to smallholder farmers

According to Official No. 1, the BGCMA's allocation of water to the smallholder farmers uses the criterion – as stipulated in the WAR programme – that if the smallholder farmers are black, a licence is automatically granted to them. Official No. 2 indicated that for food gardening projects, the criterion was that 5000-litre water tanks should be given to those with a household income of not more than R3000 per month, with the stipulation that neither the applicant nor his/her spouse could be working for the municipality or the government. The tanks were to be given on the further condition that the beneficiary would leave the tank behind should they relocate. Official No. 1 indicated that to fulfil the water allocation criteria the BGCMA had to coordinate with various organisations through their division of stakeholder engagement; some departments such as the DRDLR, however, did not recognise the work that the BGCMA was doing nor how it fitted with their mandates as they understood the land and water relationship differently and thus seemed to resist cooperation. The BGCMA, for example, invited the DRDLR to attend certain roadshows but without success. According to Official No. 4, it was also difficult for departments to get hold of each other. Official No. 6 emphasised that some municipalities struggled to maintain acceptable cooperation obligations; other government departments were not sufficiently decentralised and were thus unable to render services to rural communities. The Irrigation Board (IB),[1] which had recently been converted into a WUA, did not include black farmers in water allocation, and

[1] Irrigation Boards (IB) were established under Section 79 of the *Water Act No. 4 of 1956*. The main function of an IB was to manage water resources within an irrigation district; as such the IBs mainly served the interests of the privileged minority. After the promulgation of the *National Water Act No. 36 of 1998*, the IBs were supposed to be converted into water user associations (WUAs) which function at a local level and are supposed to serve the interests of everyone, including the historically disadvantaged. Unfortunately, there have been huge problems with the conversion of IBs to WUAs, with most IBs continuing to function privately and others refusing to be converted. This, together with Existing Lawful Use (ELU) status, has maintained the inequalities of the past in accessing agricultural water.

only non-governmental organisations (NGOs) and private cooperatives maintained acceptable standards of communication and service delivery.

Supporting organisations attempted to coordinate on bringing about positive outcomes for smallholder farmers; unfortunately, the agencies that allocated resources tended to treat smallholder farmers as a uniform group, despite their diverse needs. Official No. 1 indicated that the difference between WUA and non-WUA farmers was social and political power; the interests of smallholder farmers who were in the WUA were protected by the WUA constitution and legal processes, while non-WUA smallholder farmers had no channels through which to voice their concerns. Official No. 2 also emphasised the negative impacts of a uniform allocation of resources to smallholder farmers, especially those in need of land. Smallholder farmers could be given land to farm that was far from where they lived; sometimes they did not have transport and so had to rely on public transport, and, because of the distance involved, infrastructure at the farm could be vandalised or stolen. As a result, some of the smallholder farmers ended up leaving farming, an example of which is the Ashton smallholder farmers who had to travel 20 kilometres to and from their farms daily. The capacity of these smallholder farmers was not prioritised when allocating resources. Clearly, if the vicious cycle of failure to achieve water allocation targets is to be avoided, supporting institutions need to better understand the characteristics of individual smallholder farmers.

Challenges of accessing water by smallholder farmers

Access to productive water varied within the group of farmers who were not members of a WUA; there was also a huge contrast between farmers in the non-WUA group and the two farmers who were members of a WUA. Table 1 shows the type of access to water by the different smallholder farmers who were interviewed.

Out of the ten non-WUA smallholder farmers interviewed, only two had water use entitlements. The non-WUA farmers were hampered in their attempts to influence the process of gaining access to water. According to non-WUA smallholder farmer No. 8, the reason they did not have a voice or influence was that English was used as a medium of communication, even in meetings that they were invited to attend: "We are always invited to meetings conducted by a black person speaking in English". In such meetings, the questions they wanted to ask and the answers to these questions would be interpreted; the interpretation would also leave the smallholder farmers puzzled because of the difference between what the initial speaker had said and how this was interpreted. The opposite could be said for WUA smallholder farmers No. 1 and No. 2, both of whom had access to resources such as land and water; these farmers were well represented by the Central Breede River and the Groenland WUAs. WUA smallholder farmers did not need to approach supporting organisations to request water allocations as the CEO of the WUA negotiated on their behalf, and land was considered to be one of the resources that smallholder farmers needed support to acquire, in order to have water entitlement. Non-WUA smallholder farmers acquired land in different ways: Farmer No. 1 hired the land from the farmer for whom he used to work; Farmer No. 2 was assisted by the Department of Public Works; Farmers No. 3, 7, 8, 9 and 10 leased the land from the municipality (which was previously an open space used by the community as a dumping site); Farmer No. 4 received the land through the support of the Overberg District Municipality, although the land did not have water rights; Farmers No. 5 and 6 inherited the land from their fathers.

Table 1. Smallholder farmers' mechanisms of access and adequacy of water supply.

Farmer	Access mechanism	Adequacy
Non-WUA smallholder farmers		
Farmer No. 1	32 litres/hour for four hours every week	Sufficient; irrigates 5 hectares of land with 48 sprinklers in rows
Farmer No. 2	Schedule One (50 litres/day)	Insufficient for agricultural production; farmer illegally extracts an additional 10,000 litres/day
Farmer No. 3	General Authorisation	Inconsistent; GA water was redirected to another farmer; Farmer No. 3 now receives inconsistent water supply from the municipality
Farmer No. 4	No water entitlement	Water access sublet from the neighbour
Farmer No. 5	No access to water	No assistance
Farmer No. 6	No access to water	No assistance
Farmer No. 7	No water entitlement	Borehole water supply from the Department of Trade and Industry
Farmer No. 8	No water entitlement	No assistance; accesses water from municipal standpipes
Farmer No. 9	No water entitlement	No assistance; accesses water from municipal standpipes
Farmer No. 10	No water entitlement	No assistance
WUA smallholder farmers		
Farmer No. 1	Existing Lawful Water User	Water supply from Groenland Water User Association (GWUA) at 188 m^3 per month and from the DWS at 10 m^3 of river water per month
Farmer No. 2	Existing Lawful Water User	Water supply from the river is sufficient

The BGCMA together with supporting organisations assisted farmers in getting land, but in most cases the land was far away from the community. This was the case with the non-WUA smallholder farmer No. 4; he started farming with five cattle that were grazing within the community and as the number increased the farmer, together with some other farmers, applied for more land. A farm was allocated in Caledon which is a 90 km drive from Botrivier; this distance proved a problem for the farmers who could not afford to travel every day to the farm and, as a result, some of the group members ended up leaving farming. Farmers who lived far from their farms risked having their infrastructure vandalised or stolen, even by fellow farmers. Although the land was allocated for smallholder farmer No. 4, the farmer indicated that the grazing pasture of 30 hectares (ha) was too small for the 16 livestock he now owned; the land also did not have water rights. When the farmer took over the land, the aim had been to fight for the water rights; the process, however, was taking longer than expected.

Smallholder farmer No. 4 also complained that the farmers were allocated land that was already exhausted and unproductive. "The land has nothing; White farmers have already exhausted the land", he

lamented. He said that when a farmer received such land he could only harvest the first crop and after that the land would be exhausted. The case was different for the WUA smallholder farmers in terms of access to land: the sizes of both WUA farms were large and they were not hindered by distance; the land quality, however, was the same as that of the non-WUA smallholder farmers. The infrastructure on the farm was already old and government support had been very late in coming; this had resulted in low productivity. WUA farmer No. 1 was sitting with a 16 ha piece of land that would only be in production by the year 2021. The farm should have been converted into a commercial operation already but the lack of infrastructure maintenance had delayed the process.

DISCUSSION

The national Water Allocation Reform process

The transition from apartheid to democracy in the 1990s saw a major change in the legislated power of water management; from being under the control of the White minority, the focus shifted to the improvement of access to water for those who had previously lacked adequate access (Schreiner, 2013; Kidd, 2016). The major goal was to change riparian water rights which had previously given significant rights to land ownership to compulsory licencing as a management tool (Kidd, 2016). However, when drafting the new water law to address inequality in access to water rights, the decision was reached that reallocation could not be done through a haphazard administrative decision-making process as this raised fears of potential economic collapse (Movik, 2014). The provision of access to water through riparian rights skewed access to water rights along racial lines, privileging commercial White farmers over smallholder black farmers (DWAF, 1997). The failure to redistribute water rights was influenced not only by commercial White farmers but by other existing lawful users such as mines as well, which also play a crucial role in the economy (Kidd, 2016). Despite the political change, the economy remained firmly in the hands of a small privileged group and not of the poor black majority. Particularly the rural poor had limited, if any, access to these types of power, thus undermining their ability to fight for water access (Schreiner, 2013).

The change to administering water through water rights was an extremely important shift that took the world by storm, even in countries where water rights were controlled from the local level for the benefit of the poor. As stated by Machethe (2004) and Rosegrant et al. (2009), over the past three decades, access to water through a rights regime has contributed to major improvements in agricultural yield, overall economic growth and poverty alleviation, especially in rural areas. The introduction of this administrative policy in the Andean Region (Peru, Ecuador and Chile) did not recognise the management of water resources at the local level (Mitchell and Guillet, 1994; Vincent, 1998); water reform instead followed a top-down approach which conflicted with or neglected, local management systems and native water rights (de Vos et al., 2006). The case was different in South Africa, where the policy was introduced in order to ensure that there was equal access to water *especially* for the previously disadvantaged (Schreiner, 2013) who had never had the opportunity to manage water resources. The existing lawful users, however, still have powers through the old riparian law and play a major role in decision-making.

Similar scenarios have occurred in other countries. At Kimani Catchment in Tanzania, for example, a long history of in-migration of people from different ethnic groups brought about a process of state reform of natural resources which respected ancestral claims to water and thus linked people to their particular ethnic group's history, norms and customs. In this way, modern governmental procedures were combined with customary law to produce state legislation. This dual legal and institutional system yielded a variety of channels through which people could make claims and gain access to resources (Odgaard, 2002), but it also reproduced social inequalities. Tanzanian state officials regarded those whose main livelihood was pastoralism as being inferior to agriculturalists (Franks and Cleaver, 2007).

In Peru, a system of inherited customary water rights was enforced by individuals agreed upon by the respective communities. Each irrigation system, whether state-owned, communal or private, had its own customary practices and norms which were recognised by the Political Constitution of Peru, but the community was still required to register to claim their constitutional rights. Regions like Ecuador also accepted the need to work towards the recognition of legal pluralism, but efforts to achieve this were undermined or unrecognised (Pacari, 1998; Boelens et al., 2005).

To avoid a water crisis, the Andean Region tried to reform water policies through the decentralisation of water management; this entailed the deregulation and privatisation of water management in an attempt to stimulate efficiency. The ambition to do this was influenced by a presentation made by China at the World Bank and the Inter-American Development Bank (IDB) Conference which showed the success of the country's economy after prioritising efficiency (Bauer, 1997; Vianna, 2000; Roth et al., 2005). The reform, however, did not consider the real problems, and laws were not based on understanding the potentials of the different stakeholders in water management (de Vos et al., 2006). Studies of the Pangani Basin in Tanzania indicate that although smallholder farmers acquired water rights, they still wanted to continue with their customary practices; in the meantime, large scale irrigators who adhered to state statutory water law invested in water-related infrastructure in order to secure access to water (Komakech et al., 2012).

In South Africa, the NWA (1998) requires the DWS to monitor the WUAs even though WUAs are controlled by water users; the WUA controls the waterworks and decides who should get water, and the DWS cannot change these allocations. The formation of the WUAs seems to have constituted just a shift from the old Irrigation Board to include all the water users while still prioritising the legacy of the existing commercial farmers. Stakeholders such as commercial farmers have vested interests in the water sector that are difficult, if not impossible, to change (Roy, 1981; Watkins, 2006; Brown, 2013).

According to the DWA (2013), there has been a lack of cooperation between the South Africa Association of Water Users Associations (SAAFWUA) and the department, and a reluctance to engage in a partnership which extends to individual WUAs. To increase the effectiveness and efficiency of the WUAs, SAAFWUA started working closely with the DWA to give support in addressing the challenges (ibid), but the level of communication has not been satisfactory (ibid). Concerns raised by the SAAFWUA included the lack of consultation by the DWA during the policy review. The implementation of the policy was therefore opposed due to the lack of proper input, the insufficient time frame given to water users, and the government's decision to implement policy for WUAs without consulting stakeholders (ibid).

Challenges of water allocation in the Breede-Gouritz Catchment Management Area

After the end of apartheid, the implementation of Catchment Management Agencies (CMAs) was intended to signify a turning point in the rescaling of South African water reform policy. The NWA was adopted in 1998, four years later the processes of establishing CMAs had been suspended (Bourblanc and Blanchon, 2014). The failure of the establishment of the CMAs has been documented by many authors; it is variously described as being the result of poor administration, mismanagement, lack of training of the newly appointed public servants, and/or coordination problems (Gorgens et al., 1998; Pollard and du Toit, 2011). According to Mazibuko and Pegram (2006), the lack of both cooperation and consultation between the institutions caused frustration; water resource managers who wished to foster cooperation around specific issues often did not know which directorates or departments to contact within local governments. In a study done of the Inkomati-Usuthu Catchment Management Agency, communication on issues of availability of finance was also identified as one of the concerns; there was a fear that the DWS might establish parastatal structures or institutions which would restrict funds and thereby interfere with operations (Fakude, 2016).

The establishment of CMAs raised concerns with the DWS staff with regard to cost and the delegation of functions (van Koppen and Schreiner, 2014a). In 2005, 19 CMAs were proposed; by 2013, two had

been established and were in operation and another six were gazetted. In 2016, the number of CMAs intended for establishment was reduced to nine; this turned out to be a crucial matter for water governance since the CMAs are not allowed to operate beyond their set boundaries. In this way, the challenge of setting up decentralised institutions such as the CMAs and WUAs has delayed the progress of the NWA (Hattingh et al., 2004; Bourblanc, 2011; Meissner, 2016; Denby et al., 2016). The successful implementation of water policy and legislation in South Africa has always been hindered by capacity (Kahinda and Boroto, 2009). The delay in the implementation of CMAs is believed to be due to a number of factors, including the realignment of institutions and the lack of capacity and finance (PMG, 2017). Studies indicate that there is a demand for intensive support from the DWS to address existing power relations between CMAs, WUAs and the NWRS (Kemerink et al., 2011; van Koppen and Schreiner, 2014a).

According to Ncube (2018b), it was observed that the policies of different organisations were not aligned in their support for smallholder farmers. An example of this the situation in the Eastern Cape, Northern Cape and Free State, where lack of support between provincial departments resulted in little if any, water being used by smallholder farmers even though its use was officially sanctioned by the Minister through the DWAF (Muller et al., 2009). Förster et al. (2017) criticised the institutional collaboration approach as it does not increase distributive. The lack of cooperation between government structures leaves the smallholder farmers less informed on the developments happening in their areas. Further, according to Vermeulen (2018), there is a significant gap in institutional coordination among government entities on the utilisation of existing capacity; field officers in the various departments, for example, do not collaborate sufficiently and thus fail to promote a proactive environment for processing smallholder farmers' applications.

The CMAs are also not allowed to operate to full potential; they are burdened by red tape and by the requirement that every document must receive a signature and/or approval from the national office. This can take weeks, and thus some operations are delayed. Red tape is a serious stumbling block; a directorate often misses out on good opportunities because of delayed permission or lack of response from the relevant authorities (Ralekoa, 2016). It also hampers CMAs' progress towards functioning independently; it prevents them from learning by doing, in other words from making their own mistakes but then being empowered and entrusted to rectify them. It has been suggested that the DWS should only oversee and provide guidance, and not have full control over these entities (ibid). An administration that does not allow flexibility poses problems for its operations; this is especially true in cases where only one person has the power to authorise, and thus where, in their absence, the whole organisation suffers (Moench et al., 2003). This is one of the biggest challenges faced by the CMAs in the water use licence authorisation process, with all authority centralised at the head office. The BGCMA believes that the lengthy and cumbersome application process would be much quicker if 1) they themselves were given the authority to issue water licences, 2) the online application processes were fully implemented, and 3) there were sufficient BGCMA officials who dealt exclusively with water licences (Ncube, 2018a).

Challenges for smallholder farmers in accessing water

The 1956 Water Act deliberately excluded black smallholder farmers from participating in water management; as a result, they were overpowered by the commercial farmers who had not only far more technical and financial support but also had support from the apartheid-based legal system. The post-1994 transformation was intended to include greater participation by smallholder farmers in the management of water resources. Water reform at the local level in South Africa aimed to establish the WUA as a non-racial and inclusive institution; from the outset, this meant replacing the Irrigation Board, which, pre-1994, had been the de facto decision-maker on water allocation at the catchment level (Seshoka et al., 2004; Zwarteveen et al., 2017).

According to Franks and Cleaver (2007), the process and management of water governance practices will either improve or reduce the social status of the poor; inclusion and participation are seen as ways

to improve smallholder farmers' access to water. In South Africa, incorporating smallholder farmers into WUAs has been encouraged by policy; research shows, however, that smallholder farmers do not realise much from their inclusion (Faysse, 2004; Msibi and Dlamini, 2011; Ncube, 2018b; Schreiner and van Koppen, 2020). The powerful structure of WUAs influences water management decisions but maintains the status quo in terms of excluding the historically disadvantaged smallholder farmers. Freguin-Gresh et al. (2012) argued that, far from helping them, programmes and other attempts by government and development agencies have actually exacerbated the difficulties faced by smallholder farmers. A lack of appropriate local institutions and processes also hinders smallholder farmers from tapping into the various opportunities presented by government institutions (Moloi, 2010; Ayinke, 2011; Chikazunga and Paradza, 2012). Results from the interviews show that, in meetings, non-WUA smallholder farmers are still excluded by language barriers and thus lack representation, and that most are given land far from their homes, making it difficult to practice agriculture effectively.

Decentralisation is a way of shifting the responsibility for water provision and management across levels so that local actors can also be involved; this has not, however, had the desired impact of inclusive water governance and effective participation (Bosworth et al., 2018), especially in areas where there are established commercial farmers who are likely to have power in the form of resources. Commercial farmers are able to influence decision-making in a way that smallholder farmers with fewer resources cannot (Meissner, 2016). According to Bosworth et al. (2018), effective decentralisation must include capacitation. Franks and Cleaver (2007) found that although the community of Kimani was to be given responsibility in water management, they could still not fully manage the water resource; a study by Bosworth et al. (2018) of decentralisation in the Omusati Region in Namibia shows a similar outcome. Over the past 20 years, the assuming of a role in water governance by local people has not necessarily addressed their needs unless they had enough capacity to effectively participate in that governance. Lack of financial support, absence of technical skills, and illiteracy were reported as being some of the challenges that led smallholder farmers to abandon the water points they were managing (Bosworth et al., 2018). Capacity has been identified by Fanadzo and Ncube (2018) as one of the missing links in smallholder farmers' ability to manage water resources; many failures have been attributed to the lack of adequately trained farmers and extension staff, particularly in irrigation water management. Land tenure insecurity has also been singled out as a major institutional challenge leading to the poor performance of irrigation schemes.

In South Africa, the acquisition of land for agriculture is also a problem for smallholder farmers. Water allocation has been pursued in coordination with land reform and the introduction of agricultural support systems and other changes, but there has been insufficient integration of these processes; the complex legal relationships between the various departments and institutions appeared to also be counterproductive. (Woodhouse, 2012; van Koppen and Schreiner, 2014a). Many land reform programmes thus have failed because of the unavailability of water (Nortje et al., 2014); unless they can access water under a GA or Schedule One smallholder farmers who want to access water in remote areas for agricultural purposes, and women who need to collect water for domestic use are discriminated against because of the disconnect between policies (Msibi and Dlamini, 2011). The results of Msibi and Dlamini's study (ibid) also indicate that non-WUA smallholder farmers are given land that is far from their dwelling areas. This is similar to the Kimani case where limited resources were made available for productive agriculture while, at the same time, ample land was given to support extensive woodlands and gold mines (Franks and Cleaver, 2007). The distance of land of a suitable size and quality from the applicant's home significantly hampers productivity (Jacobs et al., 2003), but the smallholder farmer is blamed by the government for this poor productivity. According to Kepe and Tessaro (2014), most of the arable land in rural areas is used up, forcing farmers to take up land that is far from their homes.

Pursuing decentralisation and inclusive participation was found to be complex in the absence of an adequate investment in strengthening the capacity of local actors or smallholder farmers. When smallholder farmers are not equipped with knowledge of the finance and technical support available

from upper tiers of government, they struggle to effectively access and manage water resources. Bosworth et al. (2018) assert that decentralised governance of water resources alone will not be effective unless support is provided for strengthening the capacity of local actors. Successful decentralisation is further hampered by delays or lack of progress in water allocation.

CONCLUSION

The South African post-1994 water reform policy had three main goals: achieving social equity, resource sustainability, and economic efficiency using the principles of Integrated Water Resource Management (IWRM). In pursuit of these goals, the South African National Water Resource Strategy of 2004 (NWRS1) was developed, and implementation legislation and strategies were put in place to achieve these goals. These instruments included the *National Water Act No. 36 of 1998* and the national Water Allocation Reform strategy instituted in 2008. In 2013, the National Water Resource Strategy was revised and five allocation priorities were set up; the first priority was the reserve, the second was meeting international water requirements in terms of agreement with riparian countries, the third priority was the allocation of water for poverty eradication, to improve livelihoods of the poor and marginalized and contribute to gender and racial equity. The fourth priority was for the national economic purposes and the fifth priority was to ensure general economic purposes (NWRS, 2013). These strategies, however, failed to deal with the issues of equity and redress, the main reason for this failure being the government's continuation of Existing Lawful Use (ELU) status which has left much of the water in the hands of the few (Schreiner and van Koppen, 2020). Water and land reform policies are by definition intertwined, but in the case of South Africa, they have been administered largely independently of each other and thus have failed to untie the knot of inequality (Funke and Jacobs, 2011; Ncube, 2018b). The failure of irrigation boards to convert to water user associations (WUAs) has also kept access to productive water out of reach of the poor, including smallholder farmers.

The CMAs were established to identify existing and potential water users and to facilitate the issuing of water user licences. Unfortunately, more than 20 years later only two CMAs have been fully established, and even they have not been delegated full authority to manage the water user licencing process. The BGCMA has encountered a range of challenges relating to sociopolitical and financial factors, water quality, and technical capacity and capabilities (Mosai, 2004; Bourblanc and Blanchon, 2014). Officials employed by the BGCMA confirmed in interviews that these challenges still exist. A study conducted in the Inkomati CMA on successfully engaging disadvantaged communities in the implementation of the CMA found the challenges to be: water scarcity; diversity and inequity in stakeholders' resources; shortages of knowledge, experience and skills; extreme socio-economic differences; and a lack of communication and transparent information regarding the availability of water (Anderson, 2005). Interestingly, more than a decade later some of these same problems still exist in the BGCMA, including lack of access to agricultural water, poor access to land, and limited access to information and funding (Ncube, 2018b). In the last five years, the BGCMA has engaged extensively with smallholder farmers through research projects (Ncube, 2018a) and farmer-information roadshows, but these efforts will not yield many benefits as long as water, agriculture and land-related institutions continue to work in their respective silos.

Interviews with officials showed that to support smallholder farmers a multistakeholder engagement at national and local levels is required; there should also be coordination across government departments in order to interconnect the different natural resources, including water and land. The transferring of these resources, however, cannot be done haphazardly, considering that smallholder farmers' use of water contributes to the growth of the economy as productively as does that of existing water users (Adger et al., 2001; Forsyth, 2003; DWA, 2008; Williams, 2018). The narratives the ELU and economic considerations have influenced government thinking and contributed to the maintenance of the status

quo instead of providing for the rapid allocation of water use entitlements to smallholder farmers (Funke and Jacobs, 2011; Schreiner and van Koppen, 2020).

Smallholder farmers lack the basic mechanisms by which to productively access resources. They are not well equipped in terms of infrastructure, land or financial resources and they are disempowered because of their exclusion from communication channels such as WUAs and catchment forums. Most smallholder farmers are not part of water user associations, a finding that was also found by Ncube (2018a, 2018b) to be true for other parts of the BGCMA. Smallholder farmers, as a result, continue to be vulnerable; they seem to be trapped in a cycle of poverty to the extent of even abandoning farming.

RECOMMENDATIONS

The South African government needs to rethink its water and agricultural policies for smallholder farmers. There is an urgent need for revision and realignment of water, land and agriculture policies, and these policies need to empower smallholder farmers to become more productive. The government should also prioritise the establishment of CMAs and delegate more power to them to manage water resources under their jurisdiction; the DWS, in the meantime, should focus on monitoring these processes. Water management institutions should also be capacitated with financial and human resources; an office within the CMA that is dedicated to water user licencing and water allocation will speed up the application process.

There is a long-standing and complex issue around the continuation of ELU status; if the processes meant to release water (such as verification and validation) continue to show little success, it may be high time to consider compulsory licencing. The policy around the transformation of irrigation boards into water user associations also needs revision; this is another way the government can open up opportunities for smallholder farmers to access water. This study has shown that smallholder farmers who are part of WUAs are faring better than the ones who are not (Ncube, 2018b) in terms of productivity, access to resources, and having a representative voice in water allocation.

There is a need to empower farmers on all aspects of farm production including training in farming methods, financial capacity, and the water user licence process. Most smallholder farmers need support to become better farmers and there is no one-size-fits-all; there is a need, therefore, to first understand smallholder livelihood objectives and then set up appropriate support systems. Credit access models for smallholder farmers should be explored in consultation with the farmers themselves. It is high time that smallholder farmers participate fully in the development of strategies and policies that are meant to benefit them. The farmers in this study did not belong to any local institutions that could assist them with applications; maybe there is thus also a need to equip extension officers to effectively engage with smallholder farmers as they carry out their functions.

ACKNOWLEDGEMENTS

Part of the research was funded by the Water Research Commission (Project No.K5/2310), Private Bag X03, Gezina, 0031, South Africa. The Cape Peninsula University of Technology and the National Research Foundation (NRF) are acknowledged for the student bursary.

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