



# Exclusion and invented water scarcity: a historical perspective from colonialism to apartheid in South Africa

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## Abstract

This paper examines the dynamics of water governance in South Africa during the colonial and apartheid periods, focusing on the socio-economic and political invented water scarcity experienced by black communities. By exploring historical policies and legislation, such as the Irrigation and Conservation of Water Act No. 8 of 1912, the Riparian Rights principle, and the Water Act of 1956, this study sheds light on black people's systemic exclusion and marginalisation from accessing water resources. The analysis reveals how water governance practices were utilised as instruments of power and control, disproportionately favouring European settlers and reinforcing racial inequalities. Implementing discriminatory policies, forming reserves and forcing removals to Bantustans, establishing segregated water supply systems, and discriminatory practices in farms, mines, and urban townships, resulted in invented water scarcity for black communities. The deliberate exclusion of black communities from equitable water access created systemic disadvantages, impacting health, livelihoods, and socio-economic development. This paper argues that invented water scarcity was integral to colonial and apartheid strategies, further entrenching power imbalances and exacerbating socio-economic disparities.

**Keywords** Apartheid · Colonialism · Invented Water Scarcity · Water Governance · South Africa

## Introduction

Water scarcity is a pressing global issue that disproportionately affects marginalised communities, exacerbating social inequalities and perpetuating historical injustices. In the case of South Africa, the country's semi-arid climate, with a low average annual rainfall of approximately 500 mm and limited water availability per capita (843 m<sup>3</sup>/year), has contributed to its water scarcity (Kaziboni 2022: 28). Yet, the consequences of water scarcity have

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been deeply intertwined with the legacy of colonialism and apartheid, which systematically marginalised Black communities and denied them equitable access to water resources. 1652 Dutch settlers established a provisioning station for their ships, connecting The Netherlands with their colonies (Tewari 2002: 5; 2009: 695). However, British forces would take control of the stronghold in 1806. In the following century, as the colony came under British rule, conflicts emerged between the imperialist British and the descendants of Dutch settlers. These conflicts ultimately led to the formation of the Union of South Africa in 1910, firmly under total British control (Tempelhoff 2017: 190). The implementation of apartheid policies by the National Party from 1948 to 1994 further exacerbated the situation. Apartheid was characterised by the doctrine of “separate development,” which enforced racial segregation (Mudiriza and Edwards 2020: 6). As a result, indigenous black people in South Africa faced severe asymmetrical access to water resources and services, with white rule dominating the allocation and management of these resources. When situated within the historical, regional, and political-economic context, these power dynamics influenced specific perspectives and approaches to water resource allocation and management (Swatuk, 2017: 25).

Colonial and apartheid water politics had profound consequences, leading to approximately 14 million people, about a third of the country’s population, without safe water supply, and more than 21 million people, half the population, lacking access to sufficient sanitation services in 1994 (DWAF, 2004: 4). Consequently, the asymmetrical access to water resources based on race became a central challenge that the post-apartheid South African government had to confront (Tempelhoff 2017: 200).

In this article, I focus on socio-economic and political invented water scarcity, a situation where water scarcity is not solely a result of natural factors such as natural or biophysical conditions, but rather a consequence of deliberate human actions, policies, or practices. It describes the intentional creation or exacerbation of water scarcity through socio-political, and economic mechanisms through, for example, discriminatory allocation and management of water resources, inadequate infrastructure development, unequal access to water services, and policies that prioritise certain groups while marginalising or excluding others from accessing sufficient and safe water supplies. Invented water scarcity is often associated with social injustices, as it disproportionately affects marginalised communities and perpetuates inequalities (see Mehta 2003; Johnston 2003; Wutich 2020).

The issue of invented water scarcity in South African black communities during the colonial and apartheid periods remains a pressing concern that necessitates comprehensive examination. While previous attempts have been made to address this issue (e.g., Butler et al. 1978; Thompson 2001; Tewari 2002; 2009; Fast and Kallis 2004; Earle et al. 2005; Kidd 2009; Humby and Grandbois 2010; Bond 2011; Viljoen 2017; Weaver et al. 2017; Enqvist and Ziervogel 2019; Nyandoro 2019), a comprehensive discussion specifically focused on the lack of black people’s access to water during colonialism and apartheid in South Africa, and how this was manifested within the socio-political landscape, is still lacking.

This paper explores the historical processes and mechanisms through which socio-economic and political invented water scarcity was imposed upon South African Black communities during colonialism and apartheid, shedding light on the interplay between power dynamics and water management policies. This article aims to fill that gap by examining how policies, legislation, and discriminatory practices during these historical periods deliberately hindered black communities’ access to water, resulting in invented water scarcity. By unpacking the mechanisms behind the invented water scarcity, this research contributes to

the discourse by shedding light on the unique experiences of South African black communities during colonial and apartheid eras. Through an analysis of historical policies, legislation, and discriminatory practices that purposefully limited their access to water resources, this study deepens our understanding of the systemic mechanisms that perpetuated water scarcity.

In the subsequent sections, we will explore the historical dynamics of the socio-economic and political invented water scarcity, investigating the pivotal policies, practices, and ramifications of water inequality and invented water scarcity during colonialism and apartheid, starting by examining the implications of the initial contact with European settlers for the indigenous black population.

## **From first contact to the establishment of the colony**

The arrival of Europeans in Southern Africa brought about significant changes in water access and rights. On 6 April 1652, under the leadership of the Dutch commander, Johan Anthoniszoon “Jan” van Riebeeck, the Dutch East India Company (*Verenigde Oostindische Compagnie*, VOC) established a post at the Cape of Good Hope on the Atlantic Coast in what is now known as the Western Cape province (Ross 1999: 21; Tewari 2002: 5; 2009: 695; Thompson 2001: 33). The choice of Table Bay Valley as the settlement location was motivated by the availability of freshwater, a scarce resource in other parts of the Cape (Thompson 2001: 33; Enqvist and Ziervogel 2019: 3; Nyandoro 2019). At that time, the Khoi-Khoi pastoralists inhabited most of the land near the coast in the Western Cape, while the San hunter-gatherers resided further inland. The arrival of the Dutch signalled the decline of sovereignty for numerous indigenous groups in South Africa and marked the beginning of the country’s colonisation (Kidd 2009: 88).

During the latter half of the 17th century and the 18th century, the Cape of Good Hope came under Dutch administration and was ultimately under the control of The Netherlands (Tewari 2002: 5; 2009: 695). The arrival of Dutch settlers resulted in the loss of sovereignty for numerous indigenous ethnic groups in South Africa and marked the onset of colonisation in the region (Kidd 2009: 88). The presence of Dutch settlers had a profound impact on the social structure of the indigenous population, influencing both the economic and political development of the region and shaping race relations over time.

Within the Dutch settler community, a group known as the *trekboers* emerged, whose way of life was greatly influenced by the indigenous Khoi-Khoi people (Tewari 2002: 8; 2009: 695; Turton et al. 2004: 32). The trekboers were nomadic pastoralists and, if they owned land, cultivated food crops for their own consumption (Uys 2016). They served as precursors to the *Voortrekkers*, the Dutch pioneers who departed from the Cape Colony and migrated northwards in the 1830s (Uys 2016). Whenever the opportunity presented itself, trekboers would raid Khoi-Khoi herds and assert control over springs. In retaliation, the Khoi-Khoi would conduct counter-raids on herds belonging to the trekboers (Byrnes 1996).

## From *res omnium communes* to *dominus fluminis*

### *Res omnium communes*

The settlers established a trade and refreshment post at the Cape of Good Hope, initially having no immediate impact on the region's management and utilisation of water (Turton et al. 2004). Over time, the introduction of Roman law into the Dutch legal system from the 14th to the 16th century resulted in the development of a "hybrid law" known as Roman-Dutch law (Tewari 2009: 695; Kidd 2009: 88). Within this legal framework, the principle of *res omnium communes*, meaning "the things belonging to all," governed water allocation in The Netherlands. This principle recognised the critical role of water as a shared resource essential for survival, agriculture, and communal activities. It emphasised equitable distribution and sustainable utilisation of water resources, guided by customary norms and communal decision-making processes. *Res omnium communes* distinguished between public and private water use, with public water designated for collective use and private water strictly for personal use. The utilisation of public water was under state control. From 1652, Dutch settlers adopted the principle of *res omnium communes* to assert their control over the streams in the Table Bay Valley. As there was no established state at the time, the principle of *res omnium communes* regulated water use in the interests of the VOC.

A mere three years after settling at the Cape, Van Riebeeck was confronted with managing water usage in the valley for hygienic reasons (Tewari 2002: 7; 2009: 695). Several of the VOC's merchants had fallen ill due to consuming contaminated water from the Table Bay Valley (Tewari 2002: 7; 2009: 695). Upstream, Dutch settlers were using the rivers for bathing and laundry purposes, thereby contaminating water that flowed downstream (Tewari 2002: 7; 2009: 695; Thompson 2006: 34). To address this issue, Van Riebeeck issued a *placcaet*, a General Proclamation, on 10 April 1655, which prohibited bathing and washing personal belongings in the streams (Thompson 2006: 35; Viljoen 2017: 185). This *placcaet* indicates that the VOC possessed the authority to regulate the streams in the Table Bay Valley (Viljoen 2017: 185).

Two years later, in 1657, another *placcaet* was issued, prohibiting upstream water pollution. From 1652 to 1740, a series of *placcaets* were enacted to regulate the quantitative and qualitative use of water in the Table Bay Valley (Tewari 2002: 7; 2009: 695; Thompson 2006: 35). However, despite these efforts, pollution continued unabated, rendering the *placcaets* ineffective. The VOC resorted to imposing penalties on offenders to curb pollution. In doing so, the VOC assumed control over the utilisation of streams in the colony, ensuring that its operations were not impeded by substandard water quality. These regulations established by the VOC were designed to benefit Dutch settlers and the company itself, thereby contributing to the marginalisation of black individuals (Viljoen 2017: 185).

The VOC's primary focus in Africa was not to expand settlement but to acquire goods and supplies (Worger and Byrnes 1998; Nyandoro 2019). However, in 1661, the VOC extended its control over water access and began to regulate the irrigation water used by settlers on a small scale. In December 1661, a *placcaet* was issued prohibiting water use for irrigation to prioritise the VOC's corn-mill operation (Tewari 2009: 696). As the population grew, the water demand increased, leading to tensions between garden owners and VOC millers. The company managed these conflicts by implementing a system of entitlements

that allowed individuals to take turns using the water, known as *besondere gunsti*, “special favors” (Tewari 2009: 696).

The settler administration did not implement a uniform policy for indigenous communities, as water rights were granted to specific groups such as “colonists,” “Dutch,” “British,” and “Afrikaners” (Tewari 2009). Water rights became racially skewed, favouring white settlers at the expense of Africans. When the indigenous people refused to meet the VOC’s demands for freshwater, mats, and other goods, Dutch settlers resorted to armed conflict and displaced many of them into the interior (Worger and Byrnes 1998). Van Riebeeck held leadership until 1662, when the colony had evolved into a complex and racially stratified society (Thompson 2001: 33).

### **Dominus fluminis**

From the 18th century onward, settler administrators replaced the concept of *res omnium communes* with state ownership of freshwater sources, known as *dominus fluminis*, the full ownership principle requires total control of the resource by the state (Tewari 2009). This transition had significant implications for water governance and access as it allowed for the introduction of legal frameworks that defined water rights, allocation mechanisms, and responsibilities for maintenance and development. These frameworks often reflected the interests and priorities of those in positions of power, including colonial authorities and subsequent governments. The notion of *dominus fluminis* became universally recognised in settler territories (Milton 1995: 2). Under this system, the state assumed the role of administering, managing, and controlling water use through an administrative system based on the allocation of water rights by authorities (Kidd 2009: 88).

The British assumed control of the Western Cape on 4 January 1806, following the Battle of Blaauwberg, in which Lieutenant-General Sir David Baird led the British expeditionary force to victory over the troops of Governor Lieutenant-General Jhr Jan Willem Janssens. Subsequently, the British seized all forts and government property in Cape Town. As tensions escalated between British and Dutch settlers in the Cape, many trekboers migrated into the interior, while those who remained were marginalised and became British subjects. The trekboers who migrated to what is now called the Eastern Cape encountered competition with the indigenous Xhosas for land and water resources. This competition resulted in a series of frontier wars that erupted from 1779 to 1781 and again in 1793.

Throughout the early colonial period, the imposition of socio-economic and political invented water scarcity became increasingly prevalent. Indigenous communities experienced the encroachment of settlers on their lands, and the diversion of water resources for colonial enterprises. As the settlers established control and dominance, they manipulated water access and distribution to consolidate their authority and privilege. The period from first contact to the establishment of the colony laid the groundwork for the subsequent discriminator water governance. Over the next century and a half, English law and British systems of governance and administration gradually replaced the previously established Roman-Dutch law, as the British extended their control into the hinterland (Tewari 2009). During this period, the riparian access principle came into full force.

## The riparian access principle

After the Dutch settler rule ended in the Cape, Sir John Cradock, the Governor of the Cape Colony from 1811 to 1814, introduced a proclamation that significantly impacted people's water rights in the colony. The Proclamation on Conversion of Loan Places to Quitrent Tenure 6 of 1813 was implemented. This proclamation, attributed to Sir Cradock, is regarded "the father of the South African land registration system" (Radloff 1996: 813). Its purpose was to promote agriculture in the Cape Colony. It resulted in the transfer of land ownership to individuals, providing them with greater tenure security (Tewari 2002: 13). As a consequence, water rights became closely tied to land ownership, and riparian water rights became the prevailing British water rights policy (Tewari 2002: 13).

## Consolidation of an English legal system in the 1820s

As early as 1820, English settlers in the Cape Colony indiscriminately appointed English and Scottish lawyers and other European-origin officials as judges (Tewari 2009). These officials vehemently opposed the state having control of water. Resultantly, they granted individual water rights, and courts similarly dealt with water and land rights disagreements. In 1828 the Supreme Court was set up and staffed by English and Scottish lawyers (Kidd 2009: 88) who knew little about Roman-Dutch law. The Court inevitably became the sole authority on water rights and allocation cases (Thompson 2006: 36; Kidd 2009: 88), starkly differentiating surface and groundwater. Roman-Dutch law was subsequently replaced by English law in the Cape. Two salient aspects of British water rights were the "categorisation of water rights by forms of water, and the riparian principle superseding state control" (Tewari 2009). During the consolidation of an English legal system in the 1820s, the riparian access principle emerged as a critical aspect of water governance. Thompson (2006: 36) sums it up succinctly:

It seems that all water was common to all during this period, belonging to no-one in ownership while the government had the right to control the use of water. Entitlements to water were determined administratively. The control was, however, tightened or relaxed according to the demand, therefore, influenced by the extent of competition. (Thompson 2006: 36)

With an increasing flow of migrants from Europe and a growing population of trekboers and indigenous Africans, there was more competition for land than water resources. The allocation of water rights during the era marked by British rule demonstrated the dominance of agriculture in the Cape economy. Institutions formed by the authorities prompted the establishment of a robust white agricultural community (Tewari 2009).

In 1856, a new water management system was introduced, building upon the existing riparian access principle rooted in English law. This principle merged the rights to water and land (MacKay 2003: 50). As a result, landowners were granted ownership of both the land and the water resources beneath it. The riparian doctrine, which formed the basis of this system, stipulated that those who owned or occupied land adjacent to a water body had the right to utilise the water in a "reasonable" and beneficial manner. However, this framework favoured landowners upstream, giving them an advantage over those downstream along a

public stream. Consequently, this system placed significant trust in the hands of individual landowners.

In 1873, Sir Henry de Villiers was appointed as the Cape Colony's Chief Justice. His appointment led to the full implementation of the riparian principle, which remained in effect until 1956. However, the Hough van der Merwe (1874) case created confusion regarding the *dominus fluminis* principle, which pertained to the state ownership of rivers and water bodies. Chief Justice De Villiers noted a distinction between public and private streams in this case. Still, they did not provide a definitive ruling on whether the watercourse in question was public or private or whether the owner of the land through which a private stream flowed was entitled to use all the water (Kidd 2009: 88). The court also differentiated between the "ordinary" and "extraordinary" use of water in a public stream within the framework of the riparian access principle. "Ordinary use" refers to water necessary for supporting animal life and domestic purposes for riparian proprietors (Kidd 2009: 88). On the other hand, "extraordinary use" encompasses water required for any other purpose (Kidd 2009: 88).

Adopting the riparian access principle brought about a legal framework that favoured the interests of European settlers and landowners, perpetuating a system that marginalised indigenous communities. These communities, whose water management practices were often based on communal systems rather than individual landownership, experienced further marginalisation under this new legal framework. Their access to water resources became dependent on landownership, deepening socio-economic disparities and reinforcing colonial power structures.

### **The Glen Grey Act No. 25 of 1894**

In 1894, Cecil John Rhodes, the Prime Minister of the Cape Colony from 1890 to 1896, implemented the Glen Grey Act No. 25 of 1894. This legislation solidified racial inequalities by imposing restrictions on land ownership for black Africans. The Act established "Native Reserves" and limited the ability of Black communities to own or access land outside these designated areas. As Davenport (1991: 164) explains, its purpose was to shape African land-holding patterns within the Cape African reserves. Consequently, this policy directly impacted their access to water, confining them to arid regions with limited water resources while fertile land and water-rich areas were reserved for European settlers (Davenport 1991: 164; Kidd 2009: 88).

Under the Glen Grey Act, the riparian access principle was central to determining water rights. The Act reinforced the riparian doctrine by granting water rights to those who owned or occupied land along watercourses in the district. This provision favoured European settlers and effectively excluded black African communities from accessing water resources in their traditional territories, as their land tenure systems did not align with the riparian model. The Glen Grey Act and its adherence to the riparian access principle reinforced the power imbalances and discrimination inherent in colonial water governance. By prioritising the water rights of European settlers based on land ownership, the Act further marginalised indigenous communities, denying them equitable access to water and perpetuating their socio-economic disadvantage.



## The Irrigation Act No. 32 of 1906

In 1906, the Cape Colony introduced the Irrigation Act No. 32 of 1906, which was based on earlier laws and court decisions dating back to the 18th century. The Act also incorporated the riparian principle (Tewari 2002: 7; 2009: 699). A notable achievement of this Act was the distinction it made between public and private streams (Tewari 2002: 7; 2009: 699). According to the Act, both perennial and intermittent rivers were classified as public. The 1906 Irrigation Act holds great significance as it laid the groundwork for water governance following the formation of the Union of South Africa in 1910 (Tempelhoff 2017: 190).

These historical developments highlight the lasting impact of the riparian access principle and its implementation through legislation such as the Glen Grey and Irrigation Acts. As a result, indigenous communities experienced socio-economic and political invented water scarcity, a deliberate manipulation of water access and distribution that disadvantaged them. The principle served as a tool of power and control, reinforcing colonial structures and contributing to the invented water scarcity experienced by Black communities during colonialism and apartheid.

## From colonial to apartheid South Africa

The transition from colonialism to apartheid in South Africa intensified water governance practices, reinforcing inequalities and marginalising communities. Discriminatory policies and laws during this period disproportionately affected non-white populations, especially black communities. Water governance primarily served the interests of European settlers and the emerging capitalist economy. Water resources were allocated and managed to support agriculture, mining, and urban development, often at the expense of indigenous communities' water needs. As the colonial powers consolidated their control, they imposed water governance structures that consolidated power and privilege in the hands of the white ruling elite.

The Union of South Africa was established from the colony on 31 May 1910, comprising four territories: the Cape of Good Hope, the Orange Free State, Transvaal, and Natal. The Union is the predecessor of the current Republic of South Africa. Legislative restrictions on black people in South Africa characterised the Union.

## The irrigation and conservation of Water Act No. 8 of 1912

The first national water legislation in South Africa was the Irrigation and Conservation of Water Act No. 8 of 1912, which was based on the Irrigation Act (1906). The Act was a negotiated settlement between Transvaal and Orange Free State in the north, and Cape of Good Hope and Natal provinces, in the south (Tewari 2009: 699). It consolidated and codified the most significant water-related legislation in place in the former territories (Kidd 2009: 89; Tempelhoff 2017: 192). The Act was a significant legislation in South Africa during the colonial era that aimed to regulate the use and management of water resources, particularly concerning irrigation and conservation. The primary objective of the Irrigation and Conservation of Water Act was to promote and facilitate the development of irrigation schemes for agricultural purposes. It provided a legal framework for constructing and operating irriga-



tion infrastructure, such as dams, canals, and reservoirs, to expand agricultural production and enhance food security.

While the Irrigation and Conservation of Water Act (1912) intended to facilitate agricultural development, it operated within the broader context of colonial governance and power dynamics. The Act profoundly impacted black people's access to water resources in South Africa, contributing to the socio-economic and political invented water scarcity and further marginalising these communities. The Act predominantly favoured European settlers and large-scale commercial farmers, who had the financial means and political influence to benefit from irrigation schemes. On the other hand, indigenous communities often faced barriers to accessing water for irrigation and were further marginalised in the agricultural sector.

The 1912 Act reinforced existing power imbalances by favouring European settlers and large-scale farmers in accessing and utilising water resources for irrigation. It provided a legal framework that often prioritised the interests of these groups, who had the financial means and political influence to benefit from irrigation schemes. As a result, black people, particularly those living in rural areas, faced significant barriers accessing water for agricultural purposes.

The Irrigation and Conservation of Water Act (1912), in conjunction with other discriminatory policies such as the Natives Land Act No. 27 of 1913, which enforced racial segregation of land between black and white people (Tewari 2009: 702; Tempelhoff 2017: 194), had profound implications for land ownership and economic prospects within black communities. The Natives Land Act will be discussed in more detail below. Together, these pieces of legislation restricted Black people's access to land and limited their control over water resources. This was because ownership and control of land were closely tied to water rights. Infrastructure development associated with the Act, such as dams and canals, often bypassed or excluded black communities. These communities were denied the benefits of irrigation schemes and the associated increase in agricultural productivity, exacerbating their economic marginalisation. The invented water scarcity for black communities was also evident in the inadequate provision of water for domestic use. While the Act focused on irrigation and agricultural water use, it did not adequately address the water needs of non-white populations for drinking, sanitation, and other essential purposes.

The combination of discriminatory land policies, limited access to irrigation schemes, and inadequate provision of domestic water services under the influence of the Irrigation and Conservation of Water Act (1912) created a system of invented water scarcity for black people in South Africa. These deliberate actions and policies served to reinforce social and economic inequalities, perpetuating the marginalisation of non-white communities and further entrenching the power dynamics of colonialism and apartheid. Van Koppen et al. (2010: 4) sum it up as follows, "The dispossession of water rights was closely related to territorial segregation. The Irrigation and Conservation of Water Act of 1912 ingrained the 'lawful' appropriation of most of the nation's water resources by whites".

### **Legislation that restricted black people's access to water**

Access to water during colonialism was heavily influenced by access to land. After the Union of South Africa was formed in 1910, the state introduced two significant pieces of legislation that further marginalised and excluded black people. The first was the Natives Land Act of 1913, introduced above, which implemented a land division between blacks

and whites. Additionally, between 1936 and 1937, three more acts were promulgated that reinforced this marginalisation (Tewari 2009: 702; Tempelhoff 2017: 194). The following analysis examines the profound impact of these abhorrent pieces of legislation.

The 1913 Natives Land Act formally initiated land dispossession from black people. This Act included a Schedule of Native Areas that designated specific reserves, locations, and farms for black individuals. These designated areas, reserves, accounted for only approximately 7% of South Africa's total surface area (Dodson 2013: 30; Hall 2014: 1). The Act restricted black people from purchasing, leasing, and selling land outside of these reserves while prohibiting white individuals from owning land within them. It created a distinct separation between reserves and white farming areas, with no possibility of shifting land from one category to another. As a result, the Natives Land Act of 1913 severely limited black people's access to and ownership of land throughout the country.

The enduring consequences of this legislation were devastating for black people who were confined to the marginalised and impoverished areas. Rugege (2004) notes that the land allocated to the reserves was mostly dry and barren:

The colonial and apartheid state confined the indigenous African people to reserves consisting largely of barren land or areas with poor rainfall patterns while the more fertile land was allocated to white farmers for commercial agriculture. (Rugege 2004: 1)

However, evidence suggests the reserves were located in areas with moderate to high rainfall. Fast and Kallis (2004) document that these reserves were scattered throughout South Africa's eastern half, a region receiving between 500 and 2,000 mm of annual precipitation. This is considered high rainfall for the South African climate (Cole et al. 2018: 38).

Following the implementation of the Natives Land Act in 1913, the Native Trust and Land Act No. 18 of 1936 was enacted. This Act established the South African Native Trust, a state agency responsible for administering trust land in the interests of "the natives of the Union" (Van Kloppers and Pienaar 2014: 682). It effectively prohibited black individuals from owning land of their choice under freehold tenure in most parts of South Africa (Tempelhoff 2017). Subsequently, in 1937, the government passed two additional acts that further solidified land dispossession from black people. The Development Trust and Land Act No. 18 of 1936 authorised the expansion of "native reserves" to encompass a meagre 13.6% of South African land (Byrnes 1996: xlvi; 51). Additionally, the Black (Native) Laws Amendment Act No. 46 of 1937 prohibited black people from acquiring land in urban areas. These acts further entrenched the systemic exclusion and marginalisation of black individuals from land ownership.

The indirect consequence of land dispossession was that black people also lost water access in the more significant part of South Africa for domestic use and farming purposes. Access to land was intricately linked to water access through the riparian principle.

### **Apartheid water governance: riparian rights and dominus fluminis**

In 1948, the National Party, a right-wing Afrikaner ethnic nationalist party, emerged victorious in the South African elections, setting the stage for implementing apartheid policies (Mudiriza and Edwards 2020: 6). "Apartheid" derives from Afrikaans and signifies

separation or segregation. The apartheid regime introduced a series of laws that intertwined “political exclusion, economic marginalisation, social separation, and racial injustices” that had persisted for the previous three centuries (Coovadia et al. 2009: 819). The Population Registration Act No. 30 of 1950 defined racial categorisations based on physical appearance, mandating the identification and registration of every individual in South Africa into one of four distinct and mutually exclusive racial groups: white, Indian, Coloured (mixed race), and black (*bantu*) (Coovadia et al. 2009: 819). The overarching aim of this system was to establish a South African society in which white individuals formed the majority (Coovadia et al. 2009; Kemerink et al. 2011), thereby consolidating the dominance of the white ruling elite while marginalising other racial groups (Harshe 1991: 439).

In addition to the provisions of the 1913 Native Land Act and the 1936 Native Trust and Land Act, the enactment of the Group Areas Act No. 41 of 1950 further reinforced the segregationist agenda by mandating separate residential areas for people from different racial backgrounds. This Act perpetuated land dispossession and the subjugation of black people, effectively quashing their aspirations for land ownership in South Africa. In support of this, Baker (1965) asserted the following:

Perhaps the most egregious of all the acts relating to residence is the Group Areas Act of 1950 which represents the final blow to any form of African land ownership and establishes the pattern for the development of the African reserves. The Act is designed to effect complete segregation of different racial groups into areas assigned to each. The Act provides that by proclamation of the Governor-General-in-Council of each province the exclusive rights to own property, reside or carry on a business are to be allocated and restricted to certain racial areas.  
(Baker 1965: 565)

During apartheid, water governance policies were further shaped by implementing laws and regulations that reinforced racial segregation and entrenched inequalities. Two significant legislation that exemplify this approach are riparian rights and the National Water Act No. 54 of 1956. Riparian rights, discussed above, were derived from English common law, and formed a foundational principle of water governance during apartheid. The concept granted water usage rights to landowners or occupants situated along watercourses, thereby prioritising the interests of those with property rights adjacent to water sources. In practice, this system predominantly benefited white landowners, as they held the majority of riparian rights and wielded control over water resources.

Starting from the 1950s, the rapid growth of mining, secondary industries, and population in South Africa resulted in an exponential surge in water demand (Kidd 2009: 90). This heightened demand and the ensuing competition for water usage necessitated revisions in the legislation governing water access (Tewari 2009). In 1950, the Hall Commission, officially known as the Commission of Inquiry into Water Matters under C.G. Hall, was established. As a result of its findings, the National Water Act (1956) was enacted, replacing the 1912 Irrigation and Conservation of Water Act. The 1956 Water Act empowered the Minister of Water Affairs to declare Government Water Control Areas, granting significant administrative control over crucial water resources in the interest of the “public” or “national” welfare (Gildenhuys 1997: 59).

The 1956 National Water Act, building upon the previous Act, retained and further refined the distinction between private and public water (Tewari 2009). It delineated the rights to use public water for agricultural, urban, and industrial purposes. Riparian rights persisted, but riparian owners were required to obtain permits for water extraction and storage (Tempelhoff 2017: 190). Regrettably, the Act favoured white farmers and systematically excluded black people from accessing water (Kidd 2009: 92).

Regarding groundwater, it could be categorised as either public or private. If the Act did not specify its classification, common-law principles were applicable. Consequently, the National Water Act (1956) merged riparian rights with the state's *dominus fluminis* status, consolidating power and control over water in the apartheid government's hands (Kidd 2009: 92; Tewari 2009: 701). This legislation established stringent water abstraction, allocation, and utilisation regulations, effectively centralising authority and decision-making within the state apparatus. As a result, the government could control and distribute water resources according to its political agenda, often prioritising white communities and industries while neglecting the needs of non-white populations.

Implementing the 1956 National Water Act was widely acknowledged as a significant milestone in water regulation in South Africa, successfully reconciling diverse water interests across various sectors (Tewari 2002: 14; 2009: 701). The primary objective of the 1956 Water Act was to achieve an "equitable distribution" of water resources throughout the country. However, infrastructure investments from this Act predominantly benefited the white community, and primarily engaged in agriculture, mining, and industry (Bond 2011; Bayliss 2016). It is worth noting that the Act itself was designed based on water management systems in "water-rich" Europe, which presented challenges in a country like South Africa, characterised by arid conditions and water scarcity (Schreiner 2013: 240).

### Access to water by black people during apartheid

During the apartheid era, the government led by the National Party prioritised the provision of water for residential use in designated white areas, while predominantly white municipalities received significant investments in water services infrastructure and reticulation systems (McDonald 2002; Goldin 2010: 2). These municipalities provided water to white areas at a relatively low cost, thanks to substantial government subsidies (McDonald 2002). However, in racially mixed municipalities, adequate water and sanitation services were restricted to the white population (Goldin 2010: 2). Notably, white communities in South Africa had one of the world's highest per capita rates of home-to-swimming pools (Bond 2011). The availability of abundant water resources in white areas significantly benefited white communities and intensified dissatisfaction among black people (Tempelhoff 2017: 206). Conversely, non-white areas such as townships and rural settlements received insufficient and inferior water supplies under apartheid's water governance. This deliberate restriction of water access for black people in different areas exacerbated invented water scarcity and perpetuated systemic inequalities. The following analysis examines how black people accessed water in Bantustans, farms, mines, and urban townships within "white" South Africa.

## Bantustans

A fundamental aspect of apartheid policy involved the establishment of homelands, known as bantustans, designated for specific ethnic groups, with the ultimate goal of attaining independence as separate states. The Promotion of Bantu Self-Government Act No. 46 of 1959 officially renamed the reserves as Bantustans (Tempelhoff 2017: 199). Through the Bantu Homelands Citizenship Act No. 26 of 1970, black individuals were mandated to become citizens of their respective Bantustans, thereby forfeiting their South African citizenship (Bulled 2015: 543; Hobden 2018: 2). Consequently, whether residing in the Bantustan or not, black people were stripped of their South African citizenship, and the accompanying constitutional rights (Mamdani 1996; Coovadia et al. 2009: 819; Hobden 2018: 3). Between 1960 and 1980, approximately 3.5 million black people were forcefully relocated from their homes to the Bantustans by the authorities (Abel 2016: 1). Many individuals were “dumped” in the Bantustans without prior knowledge of whether they could sustain themselves in those areas (Vestbro 1999: 4).

The Bantustans were purportedly designated as the original areas of residence for the country’s main African ethnic groups, according to the apartheid regime (Mamdani 1996). These areas partially reflected the reserves demarcated in the Land Acts of 1913 and 1936 (Abel 2016: 6). However, it is essential to note that the borders of the Bantustans were determined by the interests of farmers and miners rather than the wishes of black South Africans (Abel 2016: 6). For instance, Bophuthatswana consisted of nineteen widely scattered territories, some of which were hundreds of kilometres apart. KwaZulu had the highest number of territories, totalling 70 (comprising 29 “big” and 41 “small” areas) (Fast and Kallis 2004).

The Transkei became the first “independent” state in 1976, followed by Bophuthatswana in 1977, Venda in 1979, and Ciskei in 1981 (Fast and Kallis 2004). Establishing homelands was crucial in creating a dominant white population in South Africa (Kemerink et al. 2011: 587). Mamdani (2012) identified the “divide and rule” philosophy as a strategy employed by British colonial authorities. Indigenous people were differentiated twice: first based on “race,” primarily defined by physical characteristics such as skin colour, and second based on “tribe,” representing different ethnic groups (Mamdani 2012). While white settlers and other immigrants were subject to civil law as “racial outsiders,” indigenous black Africans were governed by customary law (Mamdani 2012: 46). The ultimate aim of this project, as Mamdani points out, was to implement a “define and rule” strategy by dividing black people into numerous ethnic groups within their Bantustans (Mamdani 2012). In the South African context, racial classification and the creation of Bantustans served this purpose effectively.

Black people aspired to self-rule within the Bantustans under a chieftaincy (Ross 1999). However, these proved to be catastrophic failures. The apartheid government appointed local tribal leaders to govern the Bantustans, and if chiefs were uncooperative, they were removed from power (Bulled 2015: 543). By incorporating the traditional governance structure and providing financial incentives to chiefs, the apartheid state effectively maintained control over the Bantustans (Mamdani 1996). As time passed, a kleptocratic black elite emerged, driven by personal gain from their positions within the Bantustans.

Water service provision was under the Bantustan government’s jurisdiction, which partially relegated control over water services to traditional authorities (Van Koppen et al. 2002: 2). Bantustan governments had the legislative power to repeal, amend or replace the 1956 National Water Act; however, none of them, except Bophuthatswana, did so.

Bophuthatswana adopted the *dominus fluminis* principle into law in 1988. Bantustans entered into “international” agreements with “mainland” South Africa on transboundary water management in terms of the Helsinki Rules of 1966 (Tempelhoff 2017, 199; Nyandoro 2019).

Water service provision in the Bantustans was predominantly through boreholes (Tempelhoff 2017; Tarantino 2019). Between 1956 and 1957, most borehole drilling was commissioned by the Department of Native Affairs (Tempelhoff 2017). Boreholes were an unreliable water source as they sometimes ran dry, like the one in Mogogokela, in the Central Transvaal (Tarantino 2019: 22). In some cases, boreholes were a distance away from settlements like the one in Morsgat, in the Western Transvaal. The borehole was almost a kilometre from the settlement (Tarantino 2019: 22). It also required several people to operate it (Tarantino 2019: 22).

While the South African economy experienced a boom in the 1950 and 1960 s, the Bantustans remained economically stagnant (Fast and Kallis 2004). The forced removals and resulting high population densities, combined with a weak tax base, had a detrimental impact on water service delivery (Ross 1999; Van Koppen et al. 2002: 2; Fast and Kallis 2004; Enqvist and Ziervogel 2019). According to the 1950 census, 39.7% of the black African population resided in the Bantustans, which increased to 52.7% by 1980 (Thompson 2001: 194–5). Between 1970 and 1980, the population of the Bantustans grew by 69% (Thompson 2001: 195). Water services provided by the Bantustans, along with other public services, were of inferior quality compared to those in “white” South Africa (Butler et al. 1978: 133; Fast and Kallis 2004; Bond 2011; Weaver et al. 2017: 399; Mudiriza and Edwards 2020: 7). Many communities in the Bantustans relied on communal water sources, such as communal taps or boreholes, which often proved insufficient to meet the growing demand. The deliberate underinvestment in water infrastructure and limited allocation of water resources in these areas contributed to the invented water scarcity experienced by black people in the Bantustans.

## Farms and Mines in “White” South Africa

In the agricultural and mining sectors, where black labour was extensively exploited, access to water for black workers was severely limited. Farms and mines in “white” South Africa typically had segregated water supplies, with white workers enjoying access to higher-quality water sources, sanitation facilities, and piped water systems. Conversely, black workers often relied on rudimentary and inadequate water sources, such as communal taps or contaminated water sources (Bond 2019; Greenberg 2004: 8). The apartheid government prioritised the interests of commercial farmers and riparian landowners who held primary water rights. The landowners solely determined the provision of services like housing and electricity, which were used as means to control and subjugate black labour (Greenberg 2004: 8). The availability of shelter and water for black workers on farms depended on a “positive” relationship between the black employee and the white employer (Greenberg 2004: 8). While the apartheid government and private companies prioritised water provision for industries dominated by white communities, black workers experienced invented water scarcity due to systemic discrimination and the neglect of their water needs.

## Urban townships

From the mid-1930s to the 1950s, the apartheid state established at least 12 townships in South Africa. In Johannesburg, the Western Native Township (later Soweto, SOUTh WEstern TOWnships) was established in the 1930s. Soweto was “built on top of a refuse dump in the outskirts of the then fairly small City of Johannesburg” (Vestbro 1999: 2). On the Johannesburg East Rand, townships such as Katlehong and Tsakane were established in the mid-1940 and 1960 s, respectively. In Durban, KwaMashu was established in 1959, and Umlazi in 1965. In Cape Town, Khayelitsha was established in the 1980s.

Apartheid urban planning was accompanied by poor water service provision and inadequate administrative systems (Humby and Grandbois 2010: 526). Like Bantustans, black townships suffered from overcrowding (Harshe 1991: 440; Fast and Kallis 2004) and received substandard public services due to meagre infrastructure investments by the apartheid state (Fast and Kallis 2004). In 1951, approximately 314,000 black families resided in urban areas, necessitating an additional 167,000 dwellings to meet their accommodation needs (Tempelhoff 2017: 205). Black urban townships experienced lower-quality water than their white counterparts (Bond 2011; Butler et al. 1978: 133; Humby and Grandbois 2010: 526; Weaver et al. 2017: 399; Nyandoro 2019). For instance, in 1976, 93% of households in Soweto had no running water access (Hurst 2009). Water infrastructure in townships was often underdeveloped and overwhelmed, leading to unreliable and intermittent water services. Many townships relied on communal taps or standpipes shared by numerous residents, resulting in long queues and limited water availability. The inadequate provision of water services, coupled with rapid urbanisation and population growth in townships, created a situation of invented water scarcity, where black residents faced ongoing challenges in meeting their basic water needs. In urban areas, black people accessed water through communal standpipes or piped water inside the yard or the house. Standpipes, provided by municipalities and townships, were allocated approximately every 500 yards in townships like Soweto (Earle et al. 2005: 9–10; Vestbro 1999: 5). Interestingly, in Soweto, the installation of water services was not based on the communities’ inability to pay, suggesting that they could afford water services. However, the apartheid state did not invest significantly in water infrastructure for black communities in urban areas.

The apartheid state provided piped water in townships in two ways: a pipe in the yard or inside the house. In some townships, households had access to unmetered water services, and white municipalities charged a flat monthly rate for water services (Earle et al. 2005: 10; von Schnitzler 2008: 903). In Cape Town, households had their own taps, and a tariff system was in place to manage water consumption. The inadequate provision of water services by the apartheid state led to expressions of resistance, with people refusing to pay for water and other deemed inadequate services (Enqvist and Ziervogel 2019: 4). In some cases, substandard pipes resulted in leaks, leading to water bills that exceeded what users could afford (Enqvist and Ziervogel 2019: 4).

During the installation of water provision infrastructure, the authorities resorted to cost-cutting measures, resulting in using “inappropriate” materials and “sub-standard engineering” in constructing water services infrastructure in Gauteng townships in the 1940 and 1950 s. This approach led to a chaotic water reticulation infrastructure and significant water wastage (Humby and Grandbois, 2011: 526–527). Between 1951 and 1980, the population of black people living in townships more than doubled, from an estimated 5.2 million to



10.6 million. It's important to note that not all black people resided in official settlements, with many living in shacks without access to water (Thompson 2001: 242). Water supplies to urban informal settlements were minimal (Gale 1949: 395), and the delivery of essential services such as potable water, sewerage, and waste removal was either non-existent or hopelessly inadequate (Tempelhoff 2017: 204).

White communities experienced “first world” services, while black communities generally had lower quality or no access (Bakker, 2012: 152). Black people did not have access to “sufficient water” (Viljoen 2017, 188). During apartheid, water supply, together with sanitation services, was not provided by a dedicated department. Service provision was the responsibility of either a Bantustan government or a local municipality (Muller 2014: 36).

This system of racial segregation in water supply infrastructure is *apartheid hydrology*, which entails the discriminatory water management practices employed by the apartheid government. It refers to the systematic segregation and differential allocation of water resources based on racial lines, with white communities receiving preferential treatment regarding water access and infrastructure development. In contrast, non-white communities, particularly black communities, faced limited and inadequate water services. This system involved the construction of separate water supply systems for different racial groups, reinforcing the marginalisation of non-white communities.

Implementing riparian rights and the Water Act of 1956 under apartheid resulted in profound water inequalities and invented water scarcity for non-white communities. Access to water became an instrument of power, reinforcing racial divisions and perpetuating socio-economic disparities. Non-white populations, particularly black communities, faced systemic barriers restricting their access to water for domestic, agricultural, and industrial purposes. In these areas, invented water scarcity resulted from apartheid policies and discriminatory water governance. Black communities were systematically marginalised and denied equitable access to water resources, perpetuating socio-economic disparities and reinforcing racial inequalities. Addressing the historical legacy of invented water scarcity is crucial in developing inclusive and equitable water governance systems that prioritise the rights and needs of all South Africans, irrespective of their race or geographic location.

## Conclusion

Water scarcity has been a persistent issue affecting marginalised communities worldwide, intensifying social inequalities and perpetuating historical injustices. Within South Africa, the ramifications of water scarcity are deeply intertwined with the legacies of colonialism and apartheid, which systematically marginalised black communities and denied them equitable access to water resources. This paper has shed light on the historical and systemic factors that contributed to socio-economic and political invented water scarcity in black communities throughout South Africa's colonial and apartheid periods. The colonial to apartheid water governance analysis revealed a transition from communal water management systems to establishing *dominus fluminis*, whereby colonial powers controlled and exploited water resources. This shift, coupled with the implementation of riparian rights, marginalised indigenous communities and restricted their access to water. The subsequent era of apartheid witnessed the consolidation of discriminatory water governance policies,

favouring European settlers and large-scale commercial farmers through legislation such as the Irrigation and Conservation of Water Act of 1912.

The Water Act of 1956 further centralised water control within the apartheid government, perpetuating the dominus fluminis principle and implementing apartheid hydrology, which enforced separate and unequal water supply systems that disadvantaged non-white communities. These policies deliberately excluded black communities from accessing water resources for agriculture, domestic use, and economic development. The systematic marginalisation and discrimination against black South Africans, including forced removals, racial classification, and the creation of Bantustans, have had profound consequences for access to water and basic services.

This article demonstrates the intricate interplay between power dynamics and water management policies by exploring the historical processes and mechanisms through which invented water scarcity was imposed upon black communities. The study has delved into the deliberate hindrances, including legislation and discriminatory practices, that restricted black communities' access to water resources, perpetuating water scarcity. By unpacking the mechanisms behind invented water scarcity, I contribute to the discourse by shedding light on the unique experiences of South African black communities during the colonial and apartheid eras. Through an analysis of historical policies, legislation, and discriminatory practices that purposefully limited their access to water resources, this study deepens our understanding of the systemic mechanisms that perpetuated water scarcity.

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## Declarations

The author declares that he has no conflict of interest.

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