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# Water Rights, State Support, and Private Irrigation in the Cape Colony, c. 1806-1910

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## Abstract

In the nineteenth century, recurrent droughts and variable rainfall encouraged efforts to expand irrigation in the Cape Colony. Under British rule, judicial decisions and legislation increasingly linked rights to use river water to riparian landownership. This framework protected the claims of riparian proprietors while requiring irrigation schemes extending across several properties to accommodate competing rights to land and water. Alongside limited public finance, technical difficulties, and uncertain agricultural returns, these arrangements shaped the government's reliance on loans, engineering surveys, and support for private investment. Although the colonial administration also undertook irrigation works directly, their results were uneven. Landowners with secure titles, sufficient capital, and access to government assistance were better placed to benefit from irrigation development. The article examines how the relationship between water rights, landownership, and public assistance shaped both the organisation of irrigation and the unequal distribution of its benefits.

### Keywords

Cape Colony, drought, water rights, irrigation, colonial governance

## 1. Introduction

By the second half of the nineteenth century, drought had become a prominent subject of public debate among settlers in the Cape Colony. Colonial officials, engineers, and farmers increasingly discussed dam construction, river surveys, and the promotion of irrigation, bringing water resources more firmly within the purview of the colonial government. Yet the Cape did not develop an extensive state-administered irrigation system comparable to the large canal systems established in parts of British India. Hydraulic development continued to depend heavily on local initiative and private capital. This divergence raises a central question: as drought attracted growing public and administrative attention, why did the Cape government come to promote irrigation primarily through loans, technical surveys, and private investment?

The comparison concerns major government canal schemes developed in parts of British India during the second half of the nineteenth century. From 1866, the Government of India expanded irrigation construction through public agencies, drawing on ordinary revenue and loans raised in London. These arrangements supported the development of the Agra and Lower Ganges canals, although private companies and local participation also remained part of Indian irrigation [1]. In the Cape, government loans and technical assistance supported works undertaken by landowners, alongside some directly constructed state schemes [2]. The comparison also has a concrete historical basis: Francis Kanthack, the Cape's Director of Irrigation from 1907



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to 1910, had previously worked on hydraulic projects in India [3]. His career illustrates the movement of irrigation expertise between the two settings. India thus provides a relevant point of reference for examining how major works were financed, organised, and administered, and why irrigation in the Cape continued to depend heavily on landowners' investment and cooperation.

Existing scholarship has approached this subject from several directions. Environmental historians have traced changing settler perceptions of drought and land degradation [4]; legal historians have reconstructed the judicial incorporation of the doctrine of riparian rights into the Cape's Roman-Dutch legal framework [5]; and historians of agriculture and engineering have examined irrigation technology and its economic effects [6]. Building on these studies, this article examines the relationship between the legal protection of water use and the practical organisation of irrigation. It focuses on how rights attached to land interacted with government assistance, private finance, and cooperation among proprietors in shaping irrigation development in the Cape Colony.

This article draws primarily on correspondence from London Missionary Society missionaries, Cape parliamentary papers, colonial government inquiries, reports by irrigation officials, and local newspapers, supplemented by travel accounts and farmers' writings. By examining the public framing of drought, the legal evolution of water rights, and the development of irrigation works, it considers how the doctrine of riparian rights established under British rule reshaped the management of water resources and affected the conditions under which the government could undertake irrigation projects directly. It argues that the protection of riparian rights, together with financial and technical constraints, shaped a pattern of irrigation development in which government loans and expertise supported investment and cooperation among landowners, alongside a limited number of directly undertaken state schemes.

## 2. Drought and the Promotion of Irrigation

By the 1820s, missionaries of the London Missionary Society had already recorded drought in the Cape Colony and neighbouring regions. On 25 February 1822, Robert Moffat wrote of the "extreme heat and drought of the present season." Coming after the disasters of the previous two years, these conditions heightened the threat of famine and brought the crops close to complete failure. He added that many people had died of hunger during the previous year, their bodies having been carried beyond the settlement and devoured by hyenas, and feared that the current year would prove still worse [7]. At this stage, however, missionaries frequently understood drought within a providential framework. In January 1834, Robert Hamilton wrote that the Lord had again visited the land with a long and severe drought. Apart from one heavy rainfall in October, almost no rain had fallen, causing widespread crop failure among Indigenous communities. Hamilton attributed the resulting distress to the refusal of most Indigenous inhabitants to accept "this great salvation" [8]. Such accounts framed drought primarily as an expression of divine providence rather than as an administrative problem requiring sustained government intervention.

From the late 1830s, drought attracted attention in colonial newspapers. From the mid-nineteenth century, drought and irrigation also became increasingly prominent in parliamentary discussions and government inquiries. In 1839, Jacobus Boshoff wrote to the Grahamstown Journal that farmers in the northern Cape, faced with the difficulty of sustaining large herds, had been forced to move seasonally in search of pasture and water. He observed that seasonal conditions had deteriorated over the previous eight to ten years, that springs and pools had dried up, and that many farmers had relocated because they lacked reliable water supplies [9]. Before drought became a sustained subject of colonial public debate, however, communities across southern Africa had already developed a range of practices adapted to semi-arid environments. Among the Xhosa, the Gelesha method involved loosening the topsoil to improve the infiltration of rainwater. Sotho-Tswana communities constructed stone terraces to slow runoff on slopes and retain sediment, while floodwater-irrigation dams in the northern Cape, locally known as "saaidamme", captured short-lived floodwaters for the irrigation of low-lying fields [10]. Where rivers and other sources of surface water were insufficient, Indigenous communities also developed methods of raising water in successive stages and extracting it from moist layers of sand, thereby making scarce water available for cultivation and domestic use [11]. These practices embodied accumulated knowledge of local rainfall, soils, and water sources and, although generally small in scale, provided an important basis for agricultural and pastoral production before and during nineteenth-century colonial expansion. The issue, therefore, was not the absence of local responses to water scarcity, but the



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growing difficulty of incorporating these flexible and collective practices into a colonial order organised around surveyed property and legally defined water rights.

These practices varied with local topography, rainfall, and patterns of production. They show that communities already possessed ways of conserving moisture and using seasonal water supplies. The subsequent development of colonial irrigation policy therefore needs to be considered alongside these existing practices and the conditions under which communities could continue to use land and water.

The colonial government drew only selectively on these local practices in formulating its response to drought. Within its own administrative framework, it increasingly framed water scarcity as a public problem requiring investigation and intervention. In 1862, Colonial Secretary Rawson W. Rawson circulated a questionnaire to civil commissioners, asking them to assess the feasibility of constructing dams, diversion channels, and wells in their districts. River flow, potential dam sites, irrigable acreage, and estimated costs gradually became recurring subjects of official inquiry [12]. Through administrative inquiries, measurements, and engineering surveys, water scarcity was increasingly assessed in terms suited to hydraulic planning. Local practices that depended on seasonal variation and continual adjustment to particular environmental conditions received far less official attention. Newspaper coverage also brought water scarcity in frontier districts to the attention of a wider colonial readership. In 1895, the Cape Times described the drought in Namaqualand through emotionally charged expressions such as the “Great Thirst Land” and reported that local residents had been reduced to drinking brackish water accumulated in natural rock pools [13]. Such coverage helped to connect drought with questions of relief, public works, and governmental responsibility. Drought thus increasingly became a subject of government inquiry and hydraulic planning, even as local communities continued to manage its effects through their own practices.

Proponents of hydraulic development expected such works to serve several purposes. In 1854, Holloway Helmore, a missionary of the London Missionary Society, discussed the construction of a reservoir and suggested that it could provide the mission station with a degree of “stability” that it had previously lacked [14]. In his view, a reliable water supply would provide drinking water, sustain agricultural production, reduce dependence on seasonal rainfall, and enable the mission station to operate continuously.

As settler agriculture expanded into the interior, irrigation offered a means of reducing dependence on irregular rainfall and increasing the productive value of farms. For colonial officials and landowners, reliable water supplies could support commercial agriculture and permanent settlement. These benefits, however, depended partly on secure access to land. Where tenure remained uncertain, improvements could also make land more attractive to prospective settlers.

In 1895, the Resident Magistrate at Taung reported that local residents were reluctant to dig wells and build dams because they feared that white settlers would subsequently take away what they had improved [15]. Their reply shows how insecurity of tenure could discourage investment in wells and dams. Residents feared that improvements would increase the attraction of their land to white settlers without securing their own continued occupation. The anticipated benefits of irrigation therefore depended on whether those undertaking the work could retain access to the land and water they improved.

The public framing of drought in the second half of the nineteenth century therefore unfolded along two related lines. Local experiences of water scarcity were increasingly recorded in newspapers, official inquiries, and engineering surveys, while the colonial administration increasingly treated hydraulic construction as a preferred response to drought. This process was selective. Hydraulic projects promoted by settler farmers received support through government loans, technical surveys, and engineering schemes, whereas long-established Indigenous water practices received little official recognition or support. As irrigation increasingly required water to be diverted and conveyed across separately owned properties, questions concerning the legal rights to use, convey, and distribute water became central to colonial governance.

## 3. Riparian Rights and the Transformation of Water Law

Under Dutch East India Company rule, water allocation in the Cape Colony depended primarily on administrative concessions. Later South African jurists used the term dominus fluminis to describe the government’s ultimate authority to regulate and allocate flowing water [16]. The administration could determine who was entitled to draw water, when it could be drawn, and in what quantity, in accordance with



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the requirements of urban supply, Company mills, and agriculture. In *Ackerman v Company (1763)*, the court held that a water concession granted to the former proprietor did not automatically pass to the new owner. Although the Council of Policy subsequently granted the new owner permission to use the water, this fresh authorisation confirmed that access remained dependent on an administrative concession rather than on landownership itself [17]. Ownership of land therefore did not automatically confer a right to water, and the administration retained the authority to alter existing allocations.

After Britain reoccupied the Cape Colony in 1806, this legal framework gradually changed. Governor John Cradock's *Proclamation of 1813* facilitated the conversion of existing loan-place tenures into perpetual quitrent holdings, making them inheritable, transferable, and mortgageable [18]. Following the establishment of the Cape Supreme Court in 1828, many judges trained in Britain increasingly approached water disputes as conflicts between the rights of neighbouring landowners.

Through successive judicial decisions, the doctrine of riparian rights gradually entered Cape law. *Retief v Louw*, decided in 1856, marked an important step in this transition. The dispute arose when an upstream landowner diverted the stream's entire summer flow, depriving a downstream proprietor of water for drinking and irrigation [19]. Judge Sydney Smith Bell held that riparian owners along a perennial stream possessed correlative rights to make reasonable use of its water, subject to the rights of other riparian proprietors [20]. In developing this argument, he drew on the American legal writer Joseph K. Angell's *A Treatise on the Law of Watercourses* [21], treating the use of flowing water as a right attached to riparian land.

The judgment helped establish riparian landownership as a basis for legally enforceable claims to water, contributing to the gradual shift away from administrative allocation. By making each proprietor's use subject to the rights of others, it also placed legal limits on upstream diversions and provided a basis for protecting downstream owners' drinking and irrigation supplies [22]. These protections were nevertheless framed around rights attached to riparian property. The principle did not, in itself, establish equivalent claims for those without such property. Its wider significance therefore lay in strengthening the connection between access to water and landownership, making the distribution of land increasingly consequential for the legal protection of water use.

Following *Retief v Louw*, the development of riparian rights remained subject to competing judicial interpretations. Some judges continued to draw on Roman-Dutch law to emphasise landowners' rights over water originating on their property, while other decisions placed greater weight on the reciprocal obligations of proprietors along the same stream [23]. Subsequent disputes therefore concerned the limits of an owner's control over water and the grounds on which downstream proprietors could claim its use. These cases required courts to determine how limited supplies should be shared among owners whose rights were attached to riparian land. In *Van Breda v Silberbauer* (1869), the Privy Council questioned the view that a landowner could use water rising on his property at will once it had flowed beyond his boundaries in a known and defined channel.

After Henry de Villiers became Chief Justice of the Cape Colony in 1873, the rules governing shared use received further judicial clarification. In *Hough v Van der Merwe* (1874), de Villiers recognised the right of riparian proprietors to divert water from a public stream for irrigation, subject to three conditions. They could not deprive downstream proprietors of sufficient water for livestock and domestic purposes; their irrigation use had to remain within a just and reasonable share, consistent with the corresponding rights of downstream owners; and water remaining after losses caused by irrigation had to be returned to the public stream [24]. These conditions gave more precise content to riparian rights by bringing essential needs, irrigation shares, and the return of unused water within a common set of rules. They thereby provided a clearer basis for adjudicating disputes between upstream and downstream proprietors.

The courts also clarified the relationship between water originating on private land and the streams into which it flowed. In *Vermaak v Palmer*, Judge Smith's initial judgment in 1875 restricted the upstream owner's claim to unlimited use of water arising on the property; the judgment was subsequently upheld on appeal. *Van Heerden v Wiese* (1880) further developed the distinction between public and private streams [25]. Together, these decisions made the extent of a landowner's water rights depend on the legal character of the stream and the rights of other proprietors, as well as the location of its source. The growing body of precedent strengthened judicial protection for riparian water use and tied its exercise more closely to rights in land. This development, in turn, constrained the scope for administrative redistribution: government efforts to reallocate river water increasingly had to accommodate claims already recognised by the courts.



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Alongside the development of riparian case law, attempts to legislate for irrigation in the 1860s raised questions about how new works would affect existing water rights. During the 1862 inquiry of the Select Committee on Irrigation, the respective claims of upstream and downstream proprietors were already a prominent concern. John Charles Molteno argued that the lack of legislation had hindered irrigation development, while maintaining that upstream storage of floodwater did not necessarily harm downstream owners [26]. His evidence highlighted a problem that would recur in irrigation policy: how to facilitate water storage and diversion while accommodating the claims of other users. Legislative initiatives in 1861, 1863, and 1866 failed, and *Notes on Irrigation*, published in 1867, continued to call for clearer arrangements for irrigation [27]. These repeated efforts suggest that the legal framework for irrigation development remained unsettled. Local responses included negotiated arrangements and arbitration, but disputes could also lead to direct action. Irrigators at Oudtshoorn developed a local arbitration system, whereas downstream proprietors in the Eerste River valley at one point destroyed an upstream dam [28]. These contrasting responses reveal the difficulties of reconciling competing claims to water and securing agreement on irrigation works.

To facilitate irrigation works extending across property boundaries, the *Right of Passage of Water Act of 1876* provided a legal means of securing servitudes to convey water over land belonging to others [29]. Legislation enacted in 1882 further provided for the registration of these servitudes against title deeds [30]. These measures gave canal construction a clearer legal basis by defining rights of passage across privately owned land. Towards the end of the nineteenth century, legislation also introduced specialised arrangements for resolving water disputes. *Act No. 40 of 1899* established Water Courts to adjudicate disputes concerning water rights and allocation, providing an institutional foundation for the subsequent development of irrigation law under the Cape Colony's *Irrigation Act, No. 32 of 1906* [31].

The 1906 Act consolidated the distinction between public and private streams and incorporated rules governing riparian water use that had developed through case law [32]. Its treatment of public streams extended beyond perennial rivers to include certain seasonally flowing watercourses. By subjecting water in these streams to the claims of riparian proprietors, the Act limited the scope for individual landowners to impound floodwater without regard to other users' rights. These restrictions posed difficulties in semi-arid districts, where irrigation often depended on capturing intermittent flood flows. The tension lay between protecting shared rights to river water and enabling landowners to store water when it became available. The 1912 legislation subsequently modified this arrangement by distinguishing between normal and surplus flows and permitting the capture or storage of surplus water under specified conditions [33].

Taken together, these statutes largely consolidated the riparian framework established through case law. Entitlement to river water remained closely tied to riparian landownership, strengthening the legal protection of landowners' access to water for domestic and agricultural use. The framework did not, in itself, provide equivalent claims for those without riparian property. As these rights became more firmly established, they constrained the colonial government's ability to reallocate river water through administrative decisions. Expanding its capacity to survey water resources did not necessarily give the government greater authority to determine their distribution. Irrigation policy consequently relied heavily on loans, technical investigations, and agreements among landowners to facilitate new works. These measures enabled the government to promote irrigation within the existing structure of water rights, while leaving that structure largely intact.

## 4. State Support and Private Irrigation Development

The consolidation of riparian rights did not diminish the colonial government's interest in irrigation. Recurrent drought, concerns about agricultural stagnation, and the expansion of settlement sustained support for schemes intended to stabilise agricultural production, increase revenue, and attract settlers. Earlier attempts at irrigation, however, had already revealed the difficulties of constructing works under local environmental and social conditions. In 1816, James Read, a missionary of the London Missionary Society, attempted to construct a canal at Kuruman, but the project was abandoned because its proposed route crossed gardens cultivated by Tswana residents [34]. Helmore later constructed an earthen dam across the Harts River upstream from Dikgatlhong, but floods caused the river to bypass the dam in 1856 [35]. These experiences illustrate two practical constraints on irrigation development: securing agreement over the land required for construction and building works capable of withstanding local river conditions. The prospects of a scheme therefore depended on both its engineering design and the accommodation of existing land use.



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The difficulties encountered in irrigation development also prompted debate about local knowledge and agricultural practices. Some engineers attributed these difficulties partly to hydrological conditions and technical limitations, and partly to local attitudes towards irrigation and established methods of land use. These interpretations shaped the remedies they proposed, giving particular weight to professional surveys, experience from other regions, and technical guidance. Engineers thereby contributed to defining the problems that government intervention was expected to address.

In 1904, the engineer Charles Dimond H. Braine associated local concerns about silt with what he regarded as ignorance and prejudice. He argued that many irrigated regions faced similar problems but had found practical ways to manage silt, sometimes even benefiting from its presence. In South Africa, by contrast, silt was commonly presented as an obstacle to irrigation. When Braine invoked Indian experience, local objections emphasised the differences between the two regions. He consequently characterised irrigation in South Africa as still being at an early stage of development [36]. The disagreement concerned both silt management and the applicability of Indian experience to South African conditions. Braine's response illustrates how an engineer could interpret local objections as evidence of a need for technical guidance, even when those objections concerned differences between the environments in which irrigation was practised.

Francis Kanthack, who had worked on irrigation projects in India before becoming Director of Irrigation, similarly linked irrigation development to agricultural practices. Reviewing the history of irrigation in the Cape Colony in 1909, he described agriculture outside a few areas in the south-west as having remained rudimentary and geographically restricted until the end of the nineteenth century [37]. He also attributed the slow development of irrigation in the interior to what he regarded as pastoral farmers' reluctance to invest in improvements that would benefit future generations [38]. His assessment thus treated willingness to undertake long-term investment as a measure of commitment to agricultural improvement. Read alongside Braine's criticism of local attitudes, Kanthack's account shows how engineers' discussions extended beyond the design of canals and dams to judgments about local knowledge and farming practices. By identifying these as obstacles to irrigation, they provided a rationale for greater professional involvement in agricultural development through surveys and technical guidance.

Experience elsewhere in the British Empire lent further support to these arguments. Writing about irrigation in Mairwara, India, Richard Baird Smith linked waterworks to permanent settlement, agricultural improvement, and social order [39]. Philip Fletcher similarly argued, following his survey of the Olifants River, that irrigation could encourage more settled patterns of residence and cultivation in the Cape interior [40]. Such comparisons presented irrigation as a means of reshaping rural society as well as increasing agricultural production. Yet the applicability of Indian experience depended on the resources available to the colonial government. Large canal schemes in British India relied on fiscal and administrative support that the Cape could not readily match. Imperial examples nevertheless provided advocates with a language of improvement and civilisation through which to justify irrigation development. They also offered a rationale for a greater role for engineers and specialised agencies in planning and supervising irrigation works.

The *Irrigation Act of 1877* represented an early attempt to translate these ambitions into policy. It encouraged cooperation among landowners in constructing dams and canals and provided for government loans at low rates of interest. Uptake was nevertheless constrained by farmers' concerns about long-term debt and siltation, while some applications were rejected because the property offered as security was considered insufficient [41]. Schemes extending across several farms also required agreement on how repayment obligations and water supplies would be shared, making implementation dependent on negotiations among proprietors as well as technical assessment. These difficulties limited the reach of the loan scheme. Access to assistance depended partly on the availability of property that could serve as security and on borrowers' ability to bear costs before an irrigation investment yielded returns. Landowners with adequate collateral were therefore better placed to obtain support than those with limited borrowing capacity. By linking public assistance to property-based credit, the scheme made existing differences in landholding and financial resources consequential for participation in irrigation development.

The expansion of commercial agriculture provided a further incentive for irrigation investment. In the late nineteenth century, the ostrich-feather industry grew rapidly, with substantial increases in both ostrich numbers and feather exports [42]. Around Oudtshoorn in the Little Karoo, farmers diverted mountain streams to irrigate lucerne, which supplied fodder for ostriches. Irrigation thus supported the expansion of ostrich farming by



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increasing fodder production. As access to irrigation enhanced the productive value of farmland, it also contributed to rising land prices, while profits from feather exports encouraged further investment in dams and canals [43]. Commercial returns and irrigation development consequently reinforced one another.

This mutually reinforcing relationship also increased farmers' exposure to market fluctuations. Rising feather prices encouraged the expansion of ostrich farming and investment in irrigated land, but a downturn could leave farmers with construction costs they could not recover and loans they still had to repay. Irrigation investment thus tied the financial commitments of local producers more closely to the fortunes of the international feather trade [44]. Despite these risks, advocates of agricultural improvement continued to promote investment in dams and other farm infrastructure. Through farmers' associations, agricultural journals, and parliamentary debate, farmers identified as progressive presented dam construction, crop rotation, and land improvement as ways to support larger livestock populations, increase profits, and contribute to colonial prosperity [45].

From the 1880s, the colonial government experimented with the direct construction of larger dams and irrigation settlements. The disappointing results at Van Wyk's Vley and Douglas, however, weakened support for further settlement schemes. At Van Wyk's Vley, soil salinity, the silting of channels, and settlers' limited resources restricted agricultural development. The Select Committee on Irrigation Settlements, chaired by John X. Merriman in 1906, acknowledged these difficulties. The government also abandoned proposed projects at Thebus and Buchuberg in 1905 and 1907 respectively [46]. These experiences revealed the practical and financial limits of direct state construction. Government loans and private investment meanwhile remained important means of promoting irrigation development.

Private irrigation development nevertheless depended on resources that were unevenly available among landowners. The Smartt Syndicate, established in 1895 and led by Thomas Smartt, completed the Houwater Dam in 1899. Smartt's association with Cecil Rhodes subsequently enabled him to undertake a more ambitious scheme: by 1909, he had obtained more than £100,000 in advances from the Rhodes Trust to construct the Ongers Dam, also known as the Smartt Reservoir [47]. Access to mining wealth and Rhodes's networks made investment on this scale possible. The Syndicate's experience illustrates how landownership, private finance, and political connections could combine to support large irrigation works. It also suggests that a policy reliant on private initiative offered particular advantages to proprietors able to mobilise substantial capital and influential support.

Plans for postwar reconstruction gave further prominence to irrigation and white agricultural settlement. Even before the Second Boer War ended in 1902, High Commissioner Alfred Milner sought to promote British settlement in southern Africa as part of this programme. In 1901, he invited William Willcocks, whose engineering experience included irrigation works in India and Egypt and involvement in the Aswan Dam project, to investigate irrigation prospects in South Africa. Willcocks identified water storage and irrigation at times of need as essential to agricultural development, placing reservoir construction at the centre of his recommendations [48]. His proposals drew on experience gained from large hydraulic projects elsewhere in the British Empire. Their implementation in the Cape Colony, however, required accommodation with established riparian rights and coordination among numerous landowners. The application of imperial engineering expertise therefore depended on the legal and property arrangements through which individual schemes could be carried out.

After Thomas Smartt became Commissioner of Public Works in 1904, the Cape government strengthened its irrigation administration by appointing a permanent Director of Irrigation, supported by regional engineers within the Public Works Department. The *Irrigation Act of 1906* further facilitated borrowing by reducing interest rates and extending repayment periods [49]. Boreholes and farm dams increased between 1904 and 1911, although much of this development remained confined to individual properties. Larger schemes depended on agreement among landowners over both their financial obligations and the proposed use of irrigated land. The Ashton Canal project, for example, failed to secure the required level of support because some proprietors feared the costs and repayment obligations, while others were unwilling to provide the necessary security [50]. The case shows that government loans and engineering plans could not ensure agreement among landowners. Their willingness to accept financial obligations remained essential to the implementation of collective irrigation schemes.



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These developments expanded the government's role in surveying water supplies, assessing schemes, and providing financial and technical assistance. Their implementation nevertheless depended on access to land, agreements over water use, and the willingness and ability of proprietors to assume financial obligations. Riparian rights formed part of this framework, while limited public funds, uncertain agricultural returns, and engineering difficulties also shaped the prospects of individual schemes. Government support consequently worked through existing differences in landholding and access to capital, giving better-resourced landowners greater opportunities to undertake irrigation works.

## 5. Conclusion

Recurrent droughts and demands for agricultural development encouraged the Cape government to expand its involvement in irrigation during the nineteenth century. Its activities included surveys, loans, technical advice, and the direct construction of some works. Together, these measures increased government involvement without producing an extensive system of directly administered irrigation comparable to the major canal schemes discussed in relation to British India.

The protection of riparian rights was an important condition shaping this outcome. Schemes extending across several properties had to accommodate existing claims to land and water, while their financing required agreement over borrowing and repayment. These requirements interacted with limited public funds, uncertain agricultural returns, and engineering difficulties. The resulting reliance on government assistance and private investment reflected the combined effects of these conditions.

The resulting system reinforced existing inequalities in access to land and water. Riparian proprietors who possessed secure land titles, financial resources, and access to government assistance were better positioned to benefit from irrigation development. Indigenous communities, by contrast, often faced insecure land tenure and limited recognition of their claims to water. As colonial land policies restricted their access to land and water sources, the close connection between landownership and legally protected water rights placed them at a further disadvantage. The Cape experience thus demonstrates how the development of water law shaped both the organisation of colonial irrigation and the distribution of its benefits. Although the government expanded its technical and administrative capacity, irrigation development remained closely connected to existing inequalities in landownership, capital, and political influence.

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