

Dilemmas in Conservationism in Colonial Zimbabwe, 1890–1930

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Abstract: *During the period between 1890 and 1930, European farmers and miners established commercial farms and mines in the Mazoe District of colonial Zimbabwe. The colonial cash economy was dependent on state support in expropriating natural resources at the expense of indigenous people. Miners received preferential treatment in timber and energy requirements from the government because they contributed the bulk of state revenue. This policy was a source of protracted conflict between miners and farmers over forest exploitation. However, the state also sought to orient settler farmers towards the production of export crops: tobacco, maize and cotton. The two major pillars of the colonial economy, mining and agriculture, directly caused a fundamental transformation in soil and forest use, leading to deforestation and soil erosion. Soil erosion was a major risk that was faced along with the logistic and financial difficulties of pioneer farming. It however highlighted the negative impact of settler farming, particularly the perennial cultivation of the same crop on the same field, notably tobacco and maize. Land was used for short-term economic gain. What was missing was a willingness on the part of the settler society to deal effectively with the problems of deforestation and erosion, and the need for radical change in individual and collective attitudes towards natural resources.*

Keywords: soil, erosion, settlers, miners, alienation, monoculture, tobacco, cultivation, fertility, conservation, timber, woodland

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INTRODUCTION

ELLIOT AND WHITLOW HAVE RECENTLY argued that prior to 1930 a combination of ignorance and neglect resulted in widespread deforestation and soil erosion in colonial Zimbabwe. This study examines these two problems in the Mazoe District of North Eastern Zimbabwe and arrives at a similar conclusion. Specifically, the study examines the role that the two major pillars of the settler cash economy—mining and commercial agriculture—played in causing forest degradation and soil erosion. The study demonstrates that white commercial farmers generally ignored official advice on discouraging tree cutting and the cultivation of cash and food crops near water sources. The paper also shows that miners contributed to deforestation through cutting trees for timber and fuel needs. Mining and farming interests clashed over forestry resources, fracturing colonial state power as settlers and imperial scientists often failed to resolve differences between economic sectors, departments and individuals within the colony. Understanding the history of deforestation and soil erosion is therefore necessary to explain the particular trajectory of natural resource management in the region.

Context

Beach's (1974) work shows that the indigenous Shona, speaking Kore Kore and Zezuru dialects, built permanent farming and gold mining settlements on fertile plateau lands, drained by the Mazoe River in North Eastern Zimbabwe. According to Reid (1977), crop production comprised a diverse range of grains and plants; maize, sorghum, millets, rice, beans, groundnuts, melons, sweet canes, vegetables, cotton, tobacco and *dagga (cannabis)* (Beach 1974; Palmer 1977; Phimister 1977). Individuals holding political and economic power invariably exercised religious authority. In the loosely allied Shona chieftaincy system, rulers and priests formed the *dare* or council entrusted to make and enforce various regulations regarding resource use and conservation. According to Gumbo (1993), the ownership, allocation and control of land, forests and water resources all fell within the spiritual realm. Land, pastures and forests were communally owned by all people but vested in the chief who held it in trust of the people. The *dare* allocated land to individuals for homesteads and plots. Peasant families retained usufruct rights on allocated land, provided they did not display political disloyalty, migrate, commit a legal offence or violate conservation rules. Hillside and valley cultivation was rare regardless of the availability of flat lands. Under the *gombomakura* or shifting cultivation system, wood and branches were burned and the ashes spread over the land. Old lands, *makura* were rested and left fallow for new fields, *gombo*. Grass, bush and trees grew on old lands, allowing nature to revert back to something akin to the original state of forests. Cultivation was believed to damage or scar the face of the earth. Land was rested as a restitution

of the wounds inflicted on the soil (Wilson 1989; Gumbo 1993). Similarly, as Moore and Vaughan (1994) state, the Bemba of Zambia rested fields allowing them to regenerate. Clearly, under sparse population conditions, shifting cultivation was useful in conserving the land and forests.

After breaking with Shaka, the Zulu King in 1821, Mzilikazi established the Ndebele State around Bulawayo in 1837, but his subjugation and incorporation of local people did not extend to the Zezuru and Kore Kore people further north-east. Phimister (1988) and Ranger (1989) maintain that British imperial interest in the region accelerated in the mid-1880s and were motivated by speculation of a second rand. Cecil Rhodes obtained the controversial Rudd Concession in 1888 from Lobengula, Mzilikazi's successor. The concession formed the basis of the 1889 Royal Charter granted to Rhodes' British South Africa Company (BSAC), which empowered the firm to occupy the region between the Zambezi and Limpopo Rivers. The European pioneer settler column occupied the area in 1890 and Matebeleland was provisionally brought under control through war in 1893. Both the Shona and Ndebele subsequently suffered defeat in the 1896–97, the first *Chimurenga* or liberation war. The countrywide resistance against occupation was staged separately in Matebeleland and Mashonaland. Significantly, from the Mazoe Valley, the greatest spiritual medium, Charwe or Mbuya Nehanda, a heroine of national importance, led the *Chimurenga* in Mashonaland until her capture and hanging by BSAC authorities in 1898, after which settlers regarded land, minerals, cattle and other resources as war booty. In 1923, Britain took over the present day Zimbabwe from the BSAC as Southern Rhodesia.

Colonial land and agricultural policy in colonial Zimbabwe provides an essential context for the examination of forest and soil problems in the Mazoe District. Each European pioneer settler received fifteen prospective mining claims or mineral deposits and a land grant of 3000 acres or 1210 hectares. Whitlow and Zinyama argue that although colonisation was primarily inspired by great expectations of minerals, the acquisition of farmland was also a high priority and key attraction among early settlers. Although gold became, and long remained the territory's leading export, mining the alluvial gold deposits were extremely localised, offering limited opportunities for instant riches expected by the pioneers. The BSAC soon acknowledged that there was no gold mining bonanza, but other minerals were eventually discovered and mined, paralleling the development of settler agriculture. A few settlers with South African farming background recognised immediately that lands surrounding their final encampment at Fort Salisbury (Harare) were both fertile and well watered. According to Sinclair, one of their contemporaries, some of the pioneers 'saw themselves in imagination comfortably housed with wife and children, surrounded by countless herds, growing tobacco, rice, mealies and other produce both of the tropical and temperate zones' (Mathers 1891).

From 1898, settlers acquired the first large-scale commercial farms in Mazoe District and elsewhere, by dispossessing indigenous people of the better

quality arable land that was located in higher and more reliable rainfall areas. There was greater consolidation of settler farms on the Zimbabwean plateau especially after the construction of the railway system that linked the major urban centres of Harare, Bulawayo and Mutare. Under pressure from white settlers, the BSAC government appropriated more and more prime land and made investments in the railway and road infrastructure to promote export-oriented tobacco (*fodya*), (Shona) maize (*chibage*) and cotton (*donje*) agriculture in order to restore the value of its depreciating shares on the London Stock Exchange. Land alienation became widespread often building up to punitive evictions of Africans from lands claimed by settlers. The colonial state built a bureaucratic and technocratic apparatus to serve its own interests and those of the metropole. It adopted universal land use planning categories and through rubrics such as rational and scientific use it created commercial farms, national parks, planned forest and game reserves. The 1894 and 1898 Land Ordinances legislated for a reserve creation policy ended up demarcating and assigning infertile areas for Africans, starting with the waterless Gwai and Shangani Reserves in Matebeleland. In the Mazoe District, the Chiweshe Reserve was formed in 1904 for the Zezuru and Kore Kore. A series of land commissions authored by whites in 1915, 1920, 1925 culminated in the 1930 Land Apportionment Act that provided the main legal framework for racial land segregation, which guaranteed white economic dominance over black poverty. Colonial land policy, as geared to attract more white immigrants into fertile parts of Zimbabwe, acted to further dispossess the local population and relocate them to less productive lands. Apart from creating room for white settlement, African reserves served as labour pools for the farming and mining settler cash economy. Africans resisting the new *status quo* became rent-paying tenants and cheap labourers, or 'squatters' liable to arbitrary imprisonment for defiantly occupying white lands. Certainly, the policy gave rise to an intensely emotive, acrimonious and protracted contestation over African and settler land rights and claims in the short, medium and long term.

Phimister and Rukuni maintain that the settlers lacked an operational agricultural policy until 1908, when the Department of Agriculture was designed to assist white farmers. Mines and town settlements had, until then, relied on food produced by African peasants, some of who became wealthy. In 1907, BSAC directors launched a commercial farming programme based on imported seed for tobacco, maize, cotton, wheat, sorghum, groundnuts and sunflower. Key institutions created to provide extension service support to white farmers included the Salisbury and Gwebi agricultural research stations established in 1909, the Land Bank in 1912, Rhodes Inyanga and Matopos Estates in 1917. The Land Bank was critical to settler success, providing cheap loans to severely undercapitalised white farmers to purchase farms, equipment and other inputs. Tobacco and maize received major research focus because of their commercial and food value, respectively, achieving first exports to the United Kingdom as early as 1909. Soil fertility became a major research prob-

lem because of the cultivation of maize and tobacco as monocultures. The company government pursued a *laissez-faire* policy in agricultural production and marketing especially of tobacco, maize and beef. State intervention in agricultural pricing and marketing came with Responsible Government in 1923 after settlers voted against amalgamation with South Africa. With self-rule in 1923, government policy broadened from agriculture, mining and cottage industries to overall economic development of the colony, making investments in electricity, iron and steel foundries and mills.

The Mazoe District embodied the two main pillars of the settler economy, mining and agriculture that were both reliant on cheap African migrant labour. The district experienced 800–1200 mm of annual rain and rarely experienced drought. Regardless of the rich and heavy clay loam soils, less suited to tobacco cultivation, in contrast to the sandy loams of districts like Lomagundi, the district developed as one of the country's premier tobacco-producing areas. However, farms surveyed and occupied prior to 1900 had an eye to prospecting more than farming. Eventually, mining centres were established at four major gold and nickel mining centres: Bindura, Trojan, Shamva and Concession. The first ten settlers, who took up six separate farms in the northern part of the district in 1901 and 1903, shifted from both prospecting and land speculation to genuine farming, notably tobacco and maize growing. The native commissioner of Mazoe stated that farming in the district was continuing 'to make headway'. Founded in 1904, the Mazoe Farmers' Association noted in 1907 that; 'there were over fifty bona fide farmers in the district'. Tobacco production had begun with the arrival of the first ten farmers and Morkel, one of them stressed the importance of the crop to the success of pioneers. In 1908, a third of the Mazoe settlers were growing tobacco but production grew in cycles in the next 22 years.¹

The first concern about erosion was expressed in legislative terms governing forest use and most of the ideas were borrowed from South Africa which connected government officials to European and international 'discourses' about trees, erosion and water supplies. Agricultural officials believed Mazoe miners and farmers threatened water sources because their settlement and economic activities began and spread from the floodplain. As shown by the works of Beinart on Southern Africa and Vaughan on Zambia, official thought and state intervention were first concerned about the impact of cutting down vegetation near water sources: rivers, streams and wetlands. Zimbabwe's colonial agricultural officials argued that settler clearance of bush and trees along river and stream banks increased the erosive powers of run-off water.² However, soil erosion problems did not seem to concern most Mazoe miners, farmers and sections of the central government who believed that it was neither serious nor widespread enough to warrant attention.

Both company and Responsible Government officials had largely ignored the advice of their own agricultural officials, together with that of other informed 'experts' and early contributors to newspapers and journals. Govern-

ment negligence was manifest in the serious shortage of manpower and resources in the irrigation and forestry branches. The Department of Agriculture had thirteen branches responsible for various agricultural matters including soil and water conservation. Soil management was supervised by the irrigation branch, which, like other branches suffered from acute staff shortages. There were no formal structures for the promotion of soil conservation and concern for soil erosion at the departmental level was minimal. The 1890–1930 era was a trial and error period in soil conservation (Hudson 1963). Soil management in the entire country was the responsibility of one irrigation official: W.M. Watt 1910–20, A.C. Jennings 1921–24, P.H. Haviland 1925–29 and D. Ayles 1930–1942, respectively. Explaining biotic factors causing soil erosion and the essential remedies preoccupied these technical officers. According to Ayles, ‘It was a very slow process teaching this truth to farmers as the farmer is naturally a conservative person who, before he spends any money wishes to see with his own eyes that the proposed remedy is a certain cure and, therefore, worthwhile’.³

In a widely publicised and distributed article on ‘*The Dangers and Prevention of Soil Erosion*’ published in 1913, Watt elaborated on the necessity to preserve riparian timber in the country. He regularly publicised Circular 28 that prohibited the cutting of all vegetation within ten yards from river banks. In particular, the Chamber of Mines was asked to respect and instruct forestry regulation to their wood cutters and Africans in their employment. Earlier, in 1910, Watt confronted the Mazoe mining commissioners asking them to observe a 1903 Ordinance stating that; ‘all timber for a distance of 50 feet on either side of all public streams in Southern Rhodesia is reserved under section 12 (2) (d) of the Mines and Minerals Ordinance’. During the First World War in 1916, Watt followed up the issue requesting Nobbs, the Director of Agriculture, to initiate appropriate forestry legislation for the protection of indigenous woodland within 50 feet of public water sources. Nobbs consulted and borrowed conservation ideas from other parts of empire and the dominions, especially South Africa, India, Ghana and Australia. In 1916, Valder, the Australian Director of Agriculture informed Nobbs that under the Australian Forestry Act, Crown Lands within ‘half to one chain of navigable water’ were protected but there was no legislation to curb river-bank erosion taking a toll on private lands in the north and south coast.⁴

The strong socio-economic and political links between South Africa and Zimbabwe facilitated the first specific conservation legislation in colonial Zimbabwe, a verbatim copy of the South African Forest and Herbage Preservation Act of 1859, with provisions for forest and soil protection. The Act was amended as the 1903 and 1913 Ordinances to suit local requirements, especially those seeking to prevent ‘indiscriminate bush fires’ and soil erosion associated with the destruction of tropical woodland. However, ordinances passed in 1913 covering water use, soil and woodland preservation were rarely enforced and remained dead letters in respect of settler farmers but

were vigorously applied on the indigenous population. The economic interests of politicians in government coalesced with that of landowners and capitalist production not only compromising but also greatly undermining conservation efforts. Also, most colonial regulations were very unpopular among locals, especially under conditions of land deprivation. Bullying and corrupt agricultural and forestry instructors often enforced regulations in arbitrary ways causing local resentment of conservation measures. Indeed, forest departments in Africa and India were a part of the administrative structure reflecting colonial policy, generally excluding locals from forest resources. Foresters expressed minimal enthusiasm for the impressive forest knowledge of local people, usually regarded as ignorant about forestry and conservation and spoilers of the environment. The contemptuous dismissal of indigenous knowledge and policing function of the forestry personnel as with postcolonial donor-funded natural resource management programmes, failed to build upon, or even to acknowledge, local practices and knowledge.

Dilemmas of Commercial Farming and Mining Interests

The company government promoted the production of tobacco and maize as cash and food crops, respectively, envisaging that commercial agriculture would provide 'greater self-sufficiency' for the country, and profits for the BSAC by cutting the food import bill, and raising the value of land. In particular, company shareholders supported export tobacco growing to build and sustain a stable European agricultural community. However, prior to 1930, the tobacco industry was marked by cyclical periods of boom and bust. The first growth occurred before World War I (1910–14), when tobacco became second to minerals in export value. During the war, contraction and marketing difficulties led to falling prices and bankruptcy for many farmers whose plight was exacerbated by poor crop quality. Postwar stabilisation and imperial preference for Rhodesian tobacco resulted in renewed expansion (Brown 1925) (Table 1). In the 1922–23 season, the Mazoe District became a top producer of

Table 1

Tobacco production in colonial Zimbabwe, 1913–1928

Season	Farmers	Acreage	Tonnage
1913–14	215	5627	5 m lbs
1915–16	275	1310	1.2 m lbs
1919–1920	300	4675	2.8 m lbs
1922–23	388	7758	3.5 m lbs
1926–27	763	38,456	17 m lbs
1927–28	987	52,389	24 m lbs

Source: Compiled from National Archives of Zimbabwe, files 14/1090–97.

Virginia leaf in the colony and remained among the first four until the late 1920s. By 1928, prices plummeted and made hundreds of farmers insolvent as speculative tobacco farming came to grips with retrenchment and a worldwide Great Depression. The *Rhodesia Herald* characterised the calibre of farmers of this period as ‘muddling, lacking in individual knowledge, squatter farmers with low standards of living and surprising ignorance’.⁵

Mazoe commercial farms varied greatly in overall size and acreages planted to tobacco, but the pattern of cultivation and land use was broadly similar to practices throughout the country. Farm sizes ranged from 1100 to 3000 acres mainly for tobacco, maize and cotton production, but these three crops were associated with poor plant cover and inconsistent crop canopy for soils during the critical phase of the rainy season, increasing run-off and loss of soil fertility. Like the indigenous farmers, settlers kept cattle for milk, meat and draught power, but settlers generally underutilised total farm acreages, even on small-holdings. Settlers normally selected less than 400 acres suitable for tobacco growing and the rest of the land was for rotational crops such as maize as well as grazing. Nematodes and parasitic worms attacked the root systems of young tobacco plants, compelling farmers to increase tobacco acreages to ensure economic viability. Other ecological considerations like the proximity of water and timber also affected the amount of land under cultivation. According to Watt, Jennings and Haviland, declining harvests compelled farmers to open up more land for tobacco cultivation at a time when greater concern was on bush clearance to provide firewood for tobacco curing and the limited measures to protect abandoned tobacco lands (Haviland 1927; NAZ).⁶

When European settlers established farms in the ‘virgin bush’, deforestation and soil erosion emerged as the major chronic environmental hazards faced along with the logistic and financial difficulties of pioneer farming. The identification of these dilemmas occurred early, within 20 years of European colonisation. Indeed, some officials explained the primary causes of tree destruction and soil erosion within the framework of settler agriculture. Soil exhaustion in certain areas and torrential rains were documented as the major aggravating factors. Also, the incidence of bad farming in European areas was often attributed to limited staff and state extension services rather than wilful neglect on the part of the farmer. The first 40 years of settler agriculture were documented as testing times in the light of poor communication and lack of markets for European produce. The Natural Resources Board was an example of organisations apologetic for settler excesses, in statements such as; ‘it was not surprising that under such adverse conditions the land should be subjected to the hazards of erosion’.⁷ However, a combination of ignorance and neglect resulted in the widespread destruction of natural resources. Neglect because from 1913 farmers were shown, talked to and read about conservation practices, most of which they ignored. As a result, limited progress was made in promoting the basic protection of commercial arable lands.

Certainly, early European farmers faced harsh and unfamiliar tropical environments, especially the intensive rainstorms and cyclical droughts. Stability of production, rather than environmental impacts was their major concern, since declines would be troublesome. The 'cozy' partnership due to the synergistic relationship between the administration and the large farmers tended to favour the latter regarding land use and management policies. Farmers took few if any precaution to protect arable lands, generally believing that the fertility of the soil was infinite (Whitlow 1988; Moyo 1991). According to Moyo, during the first 40 years of colonial rule, settlers took for granted soil fertility in spite of clear evidence of severe soil erosion that continued unabated on commercial farms. In the 1920s, large-scale producers, exclusively settler farmers began using inorganic fertilisers in significant quantities due to the loss of soil fertility mainly through soil erosion.

Poor crop husbandry practices, exploitative cultivation methods, ploughing down slopes and over cropping, contributed to the environmental destruction that was occurring on commercial croplands. Elwell notes that the way soils were used made poor short-term economic sense, and missing was a willingness of settler society to deal effectively with the problem of soil erosion and the need for radical change in individual and collective attitudes towards natural resources. Also, Haviland attributed rampant forest and soil destruction to ignorance caused by the 'mining of the soil'. In particular, the practice of perennial cultivation of tobacco, maize and cotton on the same fields not only caused soil exhaustion but was also a major concern in the thinking of certain agricultural officials, such as Elewell and Haviland's, whose ideas and writings on soil erosion sounded alarmist out of a frustration with the attitude of most commercial farmers.

There is evidence to show that South African conservation experts and ideas had a long tradition in colonial Zimbabwe. In 1898, the company government hired Blocker, a South African forest conservator, to assess the commercial potential of indigenous trees in Zimbabwe and his report introduced wide-ranging conservation ideas in the country. Concerned by the rate of forest denudation and soil erosion in the country, officials launched a second 'enquiry into forestry resources' in 1909. Nobbs requested that all native commissioners report on the status of forests in their respective districts. The exercise was a preamble to the 1910 official investigation by Sim, a District Forest Officer from King William's Town in South Africa. Sim's mandate was to report back on indigenous forests with a view to their commercial exploitation and conservation. Also, South African debates in the 1920s concerning the visible effects of soil erosion on semi-arid Karoo influenced official conservation thought in colonial Zimbabwe but doubts and scepticism persisted in the minds of settlers over the magnitude of the local problem. In South Africa, General Smuts admitted in the Union House of Assembly that soil erosion was the biggest problem parliament had ever tackled. The findings of the South African Drought Commission Report became a landmark

document for the most serious theoretical discussions on soil erosion effects and drought losses in Zimbabwe. Also, the American Dust Bowl (1930s) was widely cited in Southern Africa to illustrate the dangers of voracious farming methods but Mazoe farmers believed that the chances of agriculturally induced dust storms were remote in their fertile district. Indeed, Mazoe settlers regarded the subject of soil erosion as more of academic rather than practical importance. Government Reports for the Mazoe Valley Water Court in the 1920s lamented the reluctance and apathy among farmers: 'Cannot we, in this country profit by the experience of the Union and other parts of the world before it is too late and the remedy too costly'.⁸

Watt initiated measures to protect water sources in the district from 1913 by designating riparian vegetation of the Mazoe River under the 1903 Ordinance; further adding in 1915 the Umrodzi, Marasotti, Watakai, Tatajura and Amen Spruit Rivers. Tree cutting was believed to be ultimately linked to the protection of water supplies and soil erosion concerns. As a result, cutting riparian timber was prohibited for both private and state land under the Mining Law, Government Notice 343 of 1917 that extended forest reservation to 150 m of either side of water sources and applicable to all major rivers of the country: the Mazoe, Zambezi, Limpopo and Sabi embracing their important sources and tributaries.⁹ Watt informed Nobbs and the administrator that:

*'The trees on certain river banks notably the Mazoe River are already protected by government notice-from the attacks of claimholders (mine-owners) and their contractors but not I gather from the landowner or his agents...this protection should be extended to a greater number of rivers and also to woodcutters other than those in the mining interests.'*¹⁰

The Mining Commissioner Fleming and the Secretary of Mines opposed Watt's endeavours after he and a few Mazoe landowners raised concern with Nobbs that despite reservations, cutting by miners along river banks in the district continued unabated. The miners did not agree to the protection of vegetation near all rivers and streams in the country. They argued that this was unwarranted since there were no mining operations in large parts of the country. They also denied wreaking river-bank erosion attributed to soil exposure through deforestation, blaming Africans and landowners instead. The Secretary of Mines wanted a more comprehensive and fair system rather than the selective and periodic notices prohibiting miners from cutting reserved trees on the one hand and in designated areas on the other. The mining community stated it was aware of the need to protect water supplies maintaining it did not cut from along rivers but on hills. Indeed, prior to colonial mining-induced deforestation, hills and valleys in agricultural districts had been well wooded since spiritually driven indigenous conservation methods discouraged tree cutting and cultivation in such areas, often considered as sacred groves (*rambotemwa*) (Gumbo Year; Mukamuri 1989). Loggers and miners cut and

opened forests, paving way for gullies on hillsides worsened by thunderstorms. The Secretary of Mines summed up the position and attitude of miners towards cutting woodland:

*'...if the miner is prohibited from cutting from a general policy point of view, but the landowner is not so prohibited, the former would have a just cause for complaint, and we deprecate the burden on the miner of reafforestation and in any case, where he cuts, the trees spring up again and in a short period, the growth is sufficiently dense to protect the ground and leaf mould is created. Sections of Mazoe, Selukwe and Hartely Districts have experienced heavy cutting by miners, the growth is thicker today than it was before cutting took place and better timber emerges.'*¹¹

A countrywide ban on tree cutting on rivers and tributaries on private and state land raised key questions on the conservation of woodland as it would have implied stopping landowners from exploiting forests on their own properties for timber and firewood. A protracted conflict between miners and farmers over timber cutting on occupied land endangered water sources and woodland in Mazoe District and the country as a whole. Available archival evidence suggests that the mining sector caused the most havoc on the Mazoe woodland already under severe pressure from farmers and wood contractors. Existing mining legislation worsened the situation. Government policy not only permitted but also encouraged miners and prospectors to exploit tree resources free of charge and as and when it pleased them. Miners could cut down trees, free of any royalty for timber and fuel from African reserves. They paid a token or favourable fixed tariff on non-gold belt private land for cutting trees. According to an Ordinance of 1909 number 163 and of 1910 number 72:

*'...any Miner or Prospector may cut wood of any Indigenous species for the purposes of his Mining location from any land which is open to prospecting and not specifically reserved by the Mining Commissioner. This right may be exercised free of charge on vacant Government land and on all land held under gold belt title, and on payment of certain tariffs on other private property. Subject to such regulations as may be approved by His Honour the Administrator, he may cut when and where he likes.'*¹²

The reservation of mineral rights in African reserves for white people was another economic boon for miners, and even more so for the BSAC. The law gave miners seeking to invest in African reserves the right to cut timber as part of the exercise of those mining rights. Miners could essentially make a wood camp and cut wherever they pleased. One mine manager revealingly stated that: 'timbers and fuel are the life blood of the mines: they are essential to their economic working'.¹³ According to Sim:

*'The mines ... are the biggest consumers of timber and at present may cut, free of any royalty, all timber and fuel from Government land on Gold Belt areas and at a fixed tariff on other private property. They can practically make a wood camp and cut where they choose.'*¹⁴

As a result Henkel observed that vast areas both in the vicinity of and far away from existing and abandoned mines were stripped of all first growth trees. He wrote to Nobbs:

*'Indigenous forests are a valuable asset. It is this asset which in the earlier days of the Colony's history rendered it possible for Gold mining operations to be carried out. Evidence of this is afforded in the vicinity of existing and abandoned mines where vast areas have been denuded of the first growth.'*¹⁵

Increasingly, mature trees were cut down in large numbers to meet the ever-increasing demand for mining construction and fuel timbers in Shamva, Concession, Trojan and Bindura mining areas.

Elsewhere in the country, the Native Commissioner for Insiza further observed that: 'there is more timber or trees of great value ... cut down by a single average mine in a month for mine shafts and tunnels than taken by the whole native population in this district for a year'.¹⁶ Native Commissioner for Inyati reported that:

*'Little or no timber is destroyed by natives in comparison with that felled for mining, the felling of which is gradually denuding miles of country... this is self evident as could any particular spot be pointed out before occupation where acre upon acre has been cleared of timber, such as has taken place since for mining purposes.'*¹⁷

The native commissioner for Chirumhanzu also noted that the miners and the railways cut far more trees than any other sectors and were 'worse offenders' than Africans. The railways cut down trees for sleepers and tracks as well as wood fuel for engines. But Africans were not passive spectators because some of them became suppliers and contractors to the mines. Available archival evidence generally points to a higher rate of timber consumption by the mining sector countrywide. Timber demand within the sector soared as the industry developed. However, long distances and high transport costs had a negative impact on the mining and agricultural-based colonial economy in the period 1910–1923.

The apparent monopoly of the mining sector over forest resources intensified confrontation between miners and farmers. The conservationists including Jennings, Haviland and Henkel pointed out that laws permitting the cutting of timber on private property were a source of serious irritation, fric-

tion and protest within the settler agricultural community. The animosity between the two key players of the colonial economy emanated from:

*'...prospectors and miners [having] the right to cut timber free of charge on all farms where all the timber has been reserved to the Government. The only regulation which controls this cutting is one which forbids the cutting of trees less than 3 inches in diameter measured at a height of 3 feet from the ground—vide Government Notice 596 of 1920. In other respects the Mining Commissioner decides all questions affecting the cutting of wood.'*¹⁸

Government policy left farmers with little room for manoeuvre. Farmers and conservationists advanced sound arguments against the monopoly of mining capital on woodland. The *status quo* meant there was no incentive for farmers to preserve and maintain farm wood lots. The reaction of Mazoe farmers differed over time and space, and from one farmer to the next. Many farmers were negligent towards the trees on their land. Some farmers were inclined to destroy trees on their farms to discourage wood contractors and miners. Others protested by barring miners from entering their properties altogether, leading to quarrels.

The landowner had no incentive to protect the re-growth in order to nurture a future energy supply. Wood on gold belt title land in Mazoe District was traditionally never the property of the landowner. Even the re-growth remained indigenous, and could therefore be cut by miners and wood contractors at any time. Henkel commented on the consequences of the bad blood between farmers and miners:

*'The owner of a farm upon which the timber is reserved has no interest in the tree growth for the more it is destroyed the less chance is there of miners coming to his farm for wood. This is a state of affairs which should not be permitted to continue for it results in large areas remaining unproductive to the loss of the whole community.'*¹⁹

Farmers and conservationists also demanded that miners, like other consumers of forest resources, should at least comply with a set of approved cutting rules. Farmers pleaded with the government that areas cut down by miners be inspected and reported upon by foresters as was the case with forests under commercial loggers such as the Rhodesia Native Timber Concessionaires. Exempting miners from such measures meant they became a law unto themselves. Furthermore, it was argued that miners should submit monthly returns and specifically the volume or quantity of material felled and utilised free of charge. It was maintained that the submission of such returns be made compulsory to enable an estimation of the value of the direct subsidy granted by the state to the mining industry.

The subsidy itself irked farmers, concessionaires, wood contractors, the railways and conservationists. These various interest groups expected equal taxation and contribution towards the cost of forest and soil supervision and management. According to Henkel: 'to make a charge in the case of timber cut for other than mining purposes seems to me an anomaly ... where no mines are operating concessions have been granted and royalty is paid'.²⁰ Henkel further argued that:

*'...there is no doubt that under a proper system of control the indigenous forest can be made to supply timber for all time but the control involves expense. In order that this expense may not fall on one section of the community it would seem desirable that a charge should be made for all forest produce so as to yield sufficient revenue to cover the cost of supervision and maintenance. The Mining Industry it is felt would welcome any Government action which would assure to the industry a permanent supply of timber and fuel at reasonable rates.'*²¹

On their part, miners argued that their industry formed the backbone of the economy and therefore deserved adequate support from the state. This view was generally shared by many politicians of the day, notably BSAC government leaders. While the mining sector earned the country much revenue, conservationists believed that the limited nature of mine productivity required miners to act responsibly in the interests of agriculture.²²

Sim singled out wood contractors for the miners as probably the worst offenders in deforesting large areas in the colony. Wood contractors might have been selected because they entered into the timber and fuel wood trade as a business, and therefore sought to increase sales and maximise profit without thinking about the environment. Sim observed that: 'very little timber is cut by the Miners themselves, or by their accredited agents, but by contractors who cut and sell to the best advantage'.²³ However, he argued that there was little difference in the approach to felling trees among loggers, farmers, wood contractors, miners and railways. Sim lamented that:

*'...the appearance of areas cut for poles and firewood is lamentable. Stumps 3–5 feet high are seen standing everywhere, while many of the heavier logs and all the light material are left lying on the ground, only such pieces as suit present requirements being removed and the rest being left to feed grass fires.'*²⁴

Watt, Henkel and Jennings state that a combination of woodland clearance for commercial croplands and mining timber requirements seriously threatened natural resources. In the Mazoe area, acre upon acre of land had been depleted of forest cover for farming and mining purposes. The process of tree destruction proceeded at high rate in areas occupied by tobacco farmers and gold

producers. Forest clearance especially by tobacco farmers was said to be pernicious since, besides fields, the tobacco grower also required fuel wood for curing purposes. To no avail, the irrigation and forestry branches encouraged the farmers to afforest tobacco farms both for profit and soil preservation.

Forest Conservation Dilemmas

The government followed up many of Sim's recommendations including setting up a Forest Branch under the Department of Agriculture in 1910 but without a forest officer, qualified or unqualified, till 1920. The branch existed in name only for a whole decade and it appears Watt filled the vacuum working as a government forester and irrigation engineer. In January 1920, Henkel was appointed the first forest officer in colonial Zimbabwe. He had relevant South African experience where he had been conservator of forests in Natal. The 33 years from 1890 to 1923 had set a dangerous precedent in forest destruction by miners and farmers. From the 1910s onwards the felling of all types of trees accelerated at a ferocious speed since mining and agriculture depended exclusively on timber and wood fuel given an inefficient railway and road infrastructure meant to deliver low-grade coal to tobacco farmers and the scarcity or absence of viable alternatives such as metal products and hydroelectric power.

Forest and soil conservators continued to be preoccupied with the unresolved question of woodland exploitation on commercial farms because of a reduction in water flows from public streams caused by widespread *vlei* or wetland, *doro* erosion. There were 1.3 million hectares of wetlands in the country associated with headwater valleys of river systems draining the central watershed region. *Matoro* (*plural*) existed on sources or along courses of numerous small streams in the country notably the schist areas of Mashonaland. *Matoro*, resembled the *dambo* of Zambia and Malawi. They were endowed with dense masses of grass and vegetation and wet throughout the year, acting as sponges supplying stored water to streams and rivers, thereby maintaining and prolonging the long dry winter flows, April to September. While officials discouraged their cultivation, many Mazoe farmers cut drains through *vleis* to remove 'excessive moisture', increasingly clearing, draining and ploughing them on account of their soil fertility. After torrential rainfall, uncontrolled farming and grazing, the drains turned into gullies followed by loss of soil. In the 1920s, Jennings and Haviland note that the Mazoe District experienced widespread *vlei* erosion, which was also prevalent in the rest of Mashonaland. Avaricious farmers persisted in considering *vleis* their best lands but destroying them through cultivation for temporary gains even though this reduced winter grazing.

Matoro were used for rice and wheat farming on account of their rich soils, of great temptation inducing farmers to cultivate them. Farmers harvested large returns off what was usually a relatively small area of land. These areas

yielded twenty-five bags or more of maize per acre from these areas. The extension of maize growing in the 1920s as a staple and cash crop, accompanied by the widespread adoption of ox-drawn plough technology, opened more arable land for increased maize cultivation, partly to counter less reliable maize varieties, and partly to supply an expanding market in towns and mines. From 3400 ploughs in 1902, the country had 84,000 ploughs by 1930. The *vleis* were also exploited and valued for wheat and oats in the dry season, but their overuse reduced stream flow, affecting farmers downstream. In the late 1920s, legislation regulating water rights and use protected sources of streams and rivers but notably curbing *vlei* cultivation.²⁵

Economic and Environmental Changes in Mazoe District

Wider public debate in colonial Zimbabwe during the 1920s examined individual rights and state responsibility in safeguarding the proper use of natural resources. A contributor to the *Rhodesia Herald* informed readers that private ownership did not license settler individuals to do as they pleased in destroying woodland and soil. The writer maintained that the government had the right to intervene in land management for the public interest. Conservation officials believed a stage had been reached that justified and compelled the state to take steps to defend the country from the more obvious effects of excessive soil erosion caused by ‘thoughtless agricultural engineering and mining operations’. In the words of another contributor to the *Rhodesia Herald*: ‘Mother earth was only a thin skin clothing the naked poverty of the rocky ribs below’.²⁶ The press was generally critical of farmers; ‘the pastoralist and the cultivator from ancient times have been guilty in their ignorance of farming practices designed to filch from the soil a maximum of wealth with a minimum effort to maintain stable conditions and fertility’.²⁷ Cripps argued that the handwork of man, who like a prodigal is ever ready to waste his subsistence and accelerated erosion by overstocking and improper tilling of the land. His perception of the ‘evils of burning, herding and kraaling’ was similar to those of Stebbing, Director-General of the Indian Forest Service, 1900–1917, who undertook a tour of West African colonies in 1934 and recommended the ‘judicious’ regulation of, ‘... the three evils, an improvident system of farming, firing and overgrazing and hacking by the shepherds’.²⁸

Land degradation was evident in Mazoe through soil and income losses. According to Watt, one Mazoe valley farmer, Vickery ‘lost fifty acres of fertile soil to erosion in one fell swoop from a prolonged heavy downpour’ on his perennially cultivated fields.²⁹ The incessant cultivation of tobacco, maize and cotton on the same fields without rotation had become an entrenched tradition causing loss of much soil. A Shamva farmer, Moubray, observed over time that streams in his area carried fertile silt soils as a result of uninterrupted cultivation. In the Gwebi Flats, cultivated fields of maize and tobacco on the fertile watershed of the Gwebi River had become ‘scarred’ with ero-

sion. At Backhouse's farm located near the source of the Mazoe River, a neighbour, Townsend was concerned about the seriousness of erosion taking place on Backhouse's property in 1918–1920 and endangering the river with sedimentation. Townsend wanted the administrator and Jennings to intervene and rescue the situation. Jennings subsequently inspected the farm and not only discovered that most woodland had been denuded, but also the 'reckless cultivation' taking place. Backhouse was not interested in forest preservation despite financial provision by the Land Bank for that purpose. Like most other farmers, he fiercely defended his right to freely cut timber on his property. The company government rejected Townsend's call to stop his neighbour from cultivating near water sources regardless of Jennings' findings.³⁰

Throughout the 1920s, a few Mazoe farmers managed to protect arable lands with contour ridges prompted by declining harvests and repeated official warning on the hazards of erosion. Jennings and Haviland experienced resistance from farmers on conservation measures for soil protection such as contour ridges, crop rotation and letting fields lie fallow. The adoption of basic soil management techniques progressed at slow pace, a characteristic Hudson says was universal to farmers' attitudes. With the onset of the Great Depression, farmers sought to reduce expenses by abandoning conservation works, destroying the little gains made in previous years. In 1929, there had been protection works on 923 hectares of cropland in the country. Soil erosion had become a major threat to agricultural prosperity at a time 'less than ten per cent of the lands under summer crops in the country were suitably protected and each year only two per cent more land was protected'.³¹ Consequently, officials viewed soil erosion as the biggest single factor threatening productivity and farm incomes. In Mazoe, among other farmers, Ross suffered a reduction in maize crop harvests from twenty to three bags per acre. Kingsley's 20-year-old Mazoe Valley farm with no anti-erosion works had become 'denuded in every part'. It used to produce twenty bags of maize per acre that decreased to four per acre, and in certain instances the application of artificial fertilisers had little impact.³²

Soil erosion also removed nutrients such as nitrogen, phosphorus and organic carbon. The wider implication of high rates of on-farm soil losses from predominantly tobacco, maize and cotton growing were yet to be measured after the 1930s. The loss of organic matter indicated that the natural fertility of the soils of Mazoe Valley was seriously undermined. The Mazoe Valley was by no means exceptional in this regard but appeared to be fairly typical of what was happening nationwide. Quite clearly, neither the district nor country could sustain that degree of waste indefinitely. Farmers experiencing high soil losses were squeezed out of business between the imperatives of increased production costs and decreasing yields while the growing number of lands going out of production gradually threatened the agricultural industry. Older farmers witnessed 'valleys that had seemed like carpets of green grass show-

ing gaping wounds and rivers and streams encroaching more and more upon fertile soil alongside their banks'.³³

CONCLUSIONS

In spite of the open criticism of rapacious timber cutting by mining companies and poor farming techniques by settlers, colonial perceptions over time stressed the notion of 'improvident Africans' as the prime cause of environmental destruction, in particular, deforestation and erosion, two major themes in forest history discourses within the global context. Within the African context, historical soil–forest literature is obligated to show that settler farmers and miners were hostile to each other competing as profligate users of natural resources during the period 1890–1930. Although farmers enjoyed much state support in acquiring fertile land and starting export-oriented tobacco, maize and cotton production, conservative attitudes and ignorance entrapped by a commercial motive undermined progress towards the adoption of sound soil management practices. Indeed, encounters with settlers, miners and imperial scientists often fractured colonial state power that was confronted by irreconcilable contradictory forces reflecting differences between departments, interest groups and individuals within the colony.

Notes

The paper was informed by a wide range of primary and secondary sources; archival records from the National Archives of Zimbabwe that include, forestry and soil reports by scientists, officials and hired experts. Also, the paper makes use of archival memoranda, notes and writings by farmers and private individuals contributing to press debates regarding deforestation and soil erosion. Secondary literature was used to provide context and debate to the Mazoe case study.

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