Chapter 4

After political Union in 1910, the newly formed Union government decided to create a single Forestry Department located in Pretoria, the new administrative capital of South Africa. The department drew on the ‘system in force in the Cape Colony’, which was then ‘applied throughout’ the country.\(^1\) English-speakers from the Cape filled the upper echelons of forestry, with less-educated as well as educated younger Afrikaners often taking up junior or technical positions.\(^2\) The creation of a forestry department paralleled the establishment of a number of other new departments and institutes created after 1910, including the Department of Agriculture (1911), Geological Survey of South Africa (1910), South African Institute for Medical Research (1912), and the Meteorological Office.\(^3\)

Afrikaner politicians in the ruling South African Party (1911–1924) and then the Nationalist–Labour Pact government (1924–1934) both embraced forestry as a means to solving national economic, social, and environmental problems. This chapter focuses on how the policy of afforestation was used to aid in solving these problems. Ministerial decisions from 1916 onwards amplified the social dimension of afforestation, decisions that challenged the economic orientation of existing afforestation policies. A major shift occurred when in


\(^2\) Joseph Storr Lister became the Chief Conservator, while Charles Legat and K. A. Carlson, respectively, remained the heads of the Transvaal and Orange Free State. A. W. Heywood became the Conservator for Natal; J. D. M. Keet and E. J. Neethling were among early Afrikaners with qualifications in forest science, but many came through the Tokai school for foresters; see Chapter 3.

1922 the South African Party, led by Jan Smuts, decided to undertake a policy of rural white labour settlements in order to solve the ‘poor white problem’, and to alleviate political pressure relating to the 1922 Rand Strike by white miners. On 25 May 1922, Smuts announced the settlement policy to parliament, emphasising the ‘afforestation colonies’ as well as irrigation projects and railways work. The election of Hertzog’s Nationalist government in 1924 saw forestry become an even more important part of social engineering for nationalist Afrikaners. Foresters were required to accommodate poor white workers at a time of fiscal austerity and increased afforestation. This new focus in departmental employment preferences for poor whites as forest workers—as opposed to African and coloured workers—led to considerable disquiet among foresters about the scheme.

Forestry as social engineering reached its peak in 1931 when General J. B. M. Hertzog appointed F. C. Geldenhuys, an economist without training in forestry, to direct and reorganise the Forestry Department to implement nationalist policies more fully. This move destroyed morale and threatened the unique intellectual trajectory that South African foresters had embarked on since the 1880s. His reorganisation of the department was deeply resented by forestry officers, including those who spoke Afrikaans and came from what may be described as an Afrikaner background. Foresters were furious at the interference. Their titles were changed from Conservator to Inspector, a term that they interpreted to undermine their proper roles and be a demotion in rank. Geldenhuys’s attitudes towards forestry differed greatly from those of his officers. He argued that in overworked indigenous forests, ‘productivity could be very greatly increased by cutting out all the worthless species and planting up with exotics’. This situation progressively undermined the proven institutions in state forestry, until Geldenhuys was removed following the report by a Commission of Enquiry appointed by Cabinet to investigate the state of affairs in the department. In 1934, the department merged into a new Department of Agriculture and Forestry with J. D. M. Keet as Chief of the Division of Forest Management.

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5 Conservators expressed a ‘unanimity’ of criticism for the scheme, which was hastily implemented without full consultation. See Legat to G. D. Mentz, 21 November 1931, PSC 4/6, SDK 37, NASA-P.
The rapid expansion of state plantations as a result of white resettlement policies created controversy outside of forestry. Farmers downstream from upland plantations complained bitterly about the progressive desiccation of streams and rivers as a result of tree planting. The well-trodden argument that trees encouraged rain and conserved water faced renewed criticism, especially in north-eastern Transvaal and the south-western portions of Cape Province where tree planting occurred near farms. These criticisms, as discussed in this chapter and the next, formed the basis for the eventual creation of the Jonkershoek Forest Influences Research Station in 1935, a program that can be traced back to an initial (failed) attempt in 1911 to measure the influence of tree planting in the Transvaal.

Afforestation: Overcoming the obstacles

Foresters understood South Africa’s most pressing forestry problem after 1910 to be its severe shortage of softwood. Whereas foresters prior to the 1900s experimented widely with many species of trees, for diverse purposes, they began to focus on sawlog forests during the first decade of the twentieth century as government determined that its priority should be to create a secure domestic supply of sawtimber. In 1904, Hutchins had written that the ‘country must have pine plantations. The present importation of pinewood to South Africa must considerably exceed in value a million pounds sterling’, a sum that was about half the export revenue from wool. Again, in 1923, the Drought Commission noted that imports of timber and paper products accounted for more than half the value of South Africa’s imports in the period 1918–1922, an annual average for the four years of just over £3 million, the same value as in 1934, when timber imports amounted to 22 million cubic feet (about 622,000 cubic metres, of which 90 per cent was softwood lumber) at a cost of £3 million. Given the decline of exports from South Africa in the 1930s, the country’s considerable shipping costs, and its trade imbalance, this was a heavy burden from a product that could be grown domestically. The imbalance further reinforced the perception of a South African economy with an excessively weak agrarian sector, little employment potential, and dangerous dependence on mines and minerals.

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11 Union of South Africa, Proceedings 4th British Empire Forestry Conference (Pretoria: Department of Agriculture and Forestry, 1935), 99. Domestic production of sawlogs was one million cubic feet, equivalent to about 400,000 cubic foot sawn.
The new Forestry Department inherited a patchwork of land with diverse veld and forest types amounting to nearly 650,000 hectares in area.\(^{13}\) It controlled most of the country’s indigenous closed-canopy forests and had a considerable range of grassland, shrubland (Cape fynbos), and woodland scattered with indigenous trees. Much of the country’s plantations were in private hands, located in Natal (mostly wattle) and the Transvaal (eucalyptus and wattle), and grown for wattle bark and mine supports, but not for sawtimber.\(^{14}\) The aggregate of government plantations amounted to 12,167 hectares, almost all in the Cape, with a few newly established ones in the Transvaal, Natal, and a smattering in the eastern Free State. The timber harvested from the state forests (both from indigenous forests and plantations) that year was only around 28,000 cubic metres, while imports were nearly 300,000, or 10 times domestic production.\(^{15}\)

Soon after Union, Lister, the first Chief Conservator for the Union, called for a long-term, large-scale tree-planting program to augment the country’s limited timber supply and to substitute for imports. He proposed this to the Commission to Inquire into the Conditions of Trade and Industry in 1912. The commission agreed and recommended ‘the necessity of putting afforestation equal with agriculture … if this country is to develop as it should’.\(^{16}\) The need sharpened with the onset of World War I in 1914: timber imports ‘collapsed’ by 50 per cent or more from immediately before the war, and domestic prices of timber ‘rocketed’.\(^{17}\) This had the dual effect of spurring planting on and allowing the profitable sales of the department’s first harvests of plantation-grown timber, derived from the railway plantation at Worcester and the 30-year-old *Pinus radiata* (then called *P. insignis*) from its Tokai plantation in 1918 and 1919.\(^{18}\) The Conservator of Western Australia, Charles Edward Lane Poole, congratulated Legat on the success, describing the profit as ‘magnificent’, a sincere statement on his part given the difficulty in establishing plantations elsewhere in the British Empire.\(^{19}\) The sale proved that, in certain circumstances, domestic plantations could justify the investment in the long-rotation sawlog regime.

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19 Legat to Lane Poole, 24 January 1919, A988, FOR 312, NASA-P; Lane Poole to Legat, 10 April 1919, A988, FOR 312, NASA-P. The only other British colony with as advanced a plantation program was South Australia, which started establishing *P. radiata* plantations in the 1870s.
Very soon after the establishment of the new department, in 1912, Lister created a central Research Section within it, based in Pretoria, to focus especially on finding and growing suitable exotic trees.\textsuperscript{20} Robertson had pointed out in 1910 that despite the extensive research on exotics that had been pursued in South Africa, ‘much of it has been of a comparatively small value, owing to lack of central organisation and continuity of direction, insufficient scientific method, incomplete records and unsuitable silvicultural treatments’.\textsuperscript{21} Compounding this lack of silvicultural knowledge, scientists had not yet described or analysed the climate or geology of the Transvaal, Orange Free State, and Natal.\textsuperscript{22} There was

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no accurate Union-wide vegetation map.\textsuperscript{23} Hydrological research had only just begun to assess the volume and flow of rivers and catchments. The hydrology of many rivers was poorly known.\textsuperscript{24}

Despite the encouraging sales of the Worcester eucalypts and the Tokai pines, many scientific and technical problems stood in the way of creating successful future pine plantations. Early trials, both successes and failures, by Hutchins and other Cape foresters had provided a useful body of experience, but the lists of candidate tree species for new afforestation was long, the identity of species confused and uncertain, the performance of each in the country’s widely diverse habitats unknown. A more rigorous system of climatic matching, species and genetic selection, and silviculture was required in order to ensure that a large-scale afforestation drive could succeed.\textsuperscript{25} Forest researchers found it extremely difficult to predict growth of pines that produced suitable sawlogs. Uncertain choice of species and poor matching of species to site conditions resulted in unsatisfactory, unprofitable yields, despite sometimes spectacular growth rates on well-matched sites. But even where species were well-matched to a site, growth though rapid varied erratically among individual trees, with many trees unusable because of crookedness or other quality defects relating both to silviculture and to their genetics.\textsuperscript{26} Foresters in South Africa (as well as globally) lacked knowledge of the genetic provenance of species—the problem of seed source—and how provenance affected performance in new environments. They also lacked the knowledge of the ideal spacing and thinning regimes for optimum growth.

Department-led research focused primarily on improving the success of plantations at every stage—from establishment to growth, harvest, and finally, processing. Robertson took charge of the Research Section in 1913 (later with Charles S. Hubbard and John M. Turnbull as assistants).\textsuperscript{27} He developed an innovative program of silvicultural experiments and climate research, working later with A. J. O’Connor, who was educated at the Tokai school and author of the uniquely innovative Correlated Curve Trend (CCT) trials for the determination

\textsuperscript{23} The Botanical Survey of South Africa began only in 1919.
\textsuperscript{24} Twenty-five stream gauging stations had just become operational by 1905 in the Hydrographic Survey of the Transvaal.
\textsuperscript{26} For example, Keet emphasised the problem during the 1935 British Empire Forestry Conference, noting that certain plantations of 200–300 acres of a poor strain of a species had produced ‘only firewood’ and that ‘we have now very strict rules regarding this matter of seed collection, and as to the certificates that must be sent in by the foresters as to the origins, the form, the habits, and so on of the trees’; Proceedings of the Fourth British Empire Forestry Conference, 157.
\textsuperscript{27} Anon, ‘Charles Hubbard’s Distinguished Forestry Career’, Forestry News, 2/79 (1979): 2–3; John Turnbull was to conduct revolutionary work on the determinants of wood strength in pine species.
of species- and site-specific espacement and thinning regimes (see below). The Research Section actively pursued studies in botany, silviculture, climatology, ecology, genetics, and breeding, and the technological development of timber utilisation from novel forests. Experiments became increasingly professional, and were designed and coordinated centrally as a countrywide program. This program was explicitly farsighted. For example, the CCT experiments were to be maintained for up to 50 years.

The department initiated research in wood technology in 1919 by hiring Nils B. Eckbo, a Norwegian graduate in forestry from Yale and wood technology from the US Forest Service Products Laboratory in Madison, to serve as its Timber Research Officer. When Eckbo arrived in South Africa, domestic timber had a bad reputation on the South African market, despite the positive 1919 sale. He noted that South Africa’s domestic buyers did not accept ‘colonial’ timber—they rejected lumber from early plantation harvests in favour of more expensive imports because, ‘[local wood] often warps, splits, or shrinks to such an extent as to cause serious losses … which means waste of material, waste of labour, and probably loss of customers’. Eckbo embarked on research in Pretoria to discover how to season and improve plantation-grown timber so that it could be successfully processed and sold in South Africa, working in concert with colleagues such as Robertson and O’Connor, who dealt with genetics and silviculture, and Turnbull, who worked on the effects of silviculture on wood properties and timber quality.

In 1930, J. J. Kotzé, another Yale graduate, was appointed as Chief Forest Research Officer, and Nils Eckbo promoted to Chief Timber Investigations Officer. Kotzé was later to express their philosophy as being that ‘silviculture begins … in the Forest Products laboratory’, and ‘the closest liaison between silvicultural and forest products research’ was needed so that ‘[t]he silviculturalist once assured that the timber produced will be satisfactory, can so regulate his treatment of the trees that the product will be turned out’. The wood technologist, in turn, should not be satisfied to work in the laboratory alone, but he must go to the stands occasionally so as not ‘to lose touch with the factors of treatment and environment which have expressed themselves in the material he is called on to examine’.

33 Proceedings of the Fourth British Empire Forestry Conference, 168.
Working together, they started to coordinate and harmonise an overarching program that soon began to deliver highly novel solutions to the problems of the new plantation forestry.34 Researchers quickly learnt that timber quality problems could only be solved by improvements throughout the system, from the genotype, through the silvicultural systems employed, and into the sawmilling and seasoning technology. This program was tightly interwoven with the afforestation program through regular joint conferences between researchers and professional managers, so generating the knowledge base for the development of plantations and the products they yielded.35 The coherent approach to research and development in plantation forests endured for 80 years or more afterward.

Through this approach, officers working for the Forestry Branch from 1912 to 1935 solved many fundamental problems relating to climate mapping, silviculture, species identification, and wood quality. Foresters revived their interest in the genus *Eucalyptus* in the 1920s, growers in the private sector having rapidly expanded plantings of eucalypts. Problems with identification lingered because of their growth forms and because some species hybridised.36 Exploration of the home-range potential of species suitable for South African conditions, following Hutchins’s recommendations in his *Transvaal Forests Report*, began with Robertson’s 1907 report to the department, ‘Notes on the Trees of Extra-Tropical Mexico’, which became his dissertation for his Master’s degree at Yale.37 This led to vigorous exchange in seed collections, of Mexican pines and other species, but provenance—the question of the influence of home-range genetic variation within the introduced species on their performance in South Africa’s many sites—remained a problem.38 To address this, the Minister of Agriculture, Sir Thomas Smartt, chose Robertson to visit Australia in 1924. Robertson toured Australia’s forests for six months studying its flora and climate. His report offered an analysis of similarities and differences between Australia and South Africa with recommendations on the habitats and true classifications of species and genera.39 These two initiatives heralded numerous overseas visits

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34 This arrangement led to the amalgamation of the two entities to form the national Forest Research Institute in 1956.
35 The first countrywide conference on silviculture was held in 1907, leaving the question of thinning regimes in plantations ‘undeceived’; a key conference in 1935 resolved the major shift in silviculture to wide espacement and frequent thinning: Keet, ‘Historical Review of the Development of Forestry in South Africa’, 66, 86.
by South African foresters that progressively clarified the biogeography of foreign species—pines and other conifers from Europe, Asia and the Americas, and other conifers and eucalypts from Australasia, as well as other genera—and fed an experimental program that steadily improved predictions about which species and genetic varieties would grow best in South Africa, while developing the genetic stocks for further domestication in South Africa.40

Building on A. J. O'Connor's novel research design, Ian J. Craib began the research that was to make radical innovations in silviculture that improved the growth rates and yield of wattle. Craib had studied under James W. Toumey, one of America's leading silvicultural experts. The research for his PhD thesis focused on the effects of soil moisture on the growth of trees.41 Under the influence of O'Connor, Craib experimented in Natal to test regimes that included planting trees with wider spacing and then thinning intensely at a younger age. Traditional plantation management spaced trees closer together and did not thin so aggressively at an early age. In 1934 he published a pioneering paper, 'The Place of Thinning in Wattle Silviculture and its Bearing on the Management of Exotic Conifers'.42 When it was published, South African foresters saw the paper as an expression of 'some revolutionary views on certain aspects of silviculture'.43 Craib argued for a fundamentally different management regime—a risky decision when the results of his methods could take 30 years to become apparent, but his regime was adopted into silviculture policy and practice in South Africa at the 1935 conference of forest research officers.

A series of decisions based on Craib's and O'Connor's research from the mid-1930s fundamentally transformed South Africa's pine silviculture. Detailed surveys provided the information needed to match species to site (and later, genotypes within the species). Stands were now to be established by comparatively wide espacement of transplants. Regimes were to be adjusted according to site quality. Foresters planted a single species of pine in a location, spaced the trees widely, thinned early and heavily in order to forestall the competition that set in early with the rapid rates of growth achieved. Successive pruning would prevent loss of strength due to accumulation of knots, and clearfelling harvests were to be on relatively short rotations of around 30 years, to ensure a

40 For a compendium of the findings from the program, see the three volumes by Richard Poynton.
41 Toumey's supervision of South African researchers probably had a key role to play in developing the intellectual capital needed for South Africa's novel forestry problems. Whereas with E. J. Neethling the work focused on light as a determinant of forest seedling survival, with Craib the work examined soil-moisture controls on tree growth. Experience of this kind would have informed the discussions with Wicht about the design of forest hydrological research. See Chapter 7.
profitable regime. Instead of deciding when to thin based on visual assessment and judgement of tree condition, they used a quantified system based on formulas from O’Connor’s CCT experiments to estimate growth and future yields for given species, site conditions, current densities, and growth rates, and set thinnings accordingly. South African foresters knew that these ideas broke from European orthodoxy. O’Connor, who studied at Tokai and rose to prominence as the Deputy Conservator in the late 1930s, argued that it ‘requires courage to abandon the sanction of tradition’. Yet this was necessary in South Africa, where ‘our adherence to tradition [in silvicultural methods] has not yielded the expected results’. He reasoned that this perhaps occurred ‘because traditional principles meet the needs of the countries in which they were evolved so that there has been no strong urge to examine them’.

This new approach to plantation silviculture reflected the maturation of the department’s plantation program. Following Hutchins’s direction, every new forest station had its own raingauge installed, and climatic knowledge expanded quickly. By 1930, foresters had indicative experimental results about which pine grew best in different locations, beginning with the results of pre-1910s trial plantations. In 1931, the department published the first silvicultural map of South Africa. The map divided the country into distinct zones according to temperature and rainfall averages, and assigned species for afforestation to zones according to their expected performance. This map provided the means to design and interpret research, and to plan afforestation and silviculture according to the climatic zones of the country. At the same time, foresters kept detailed records of the topography, soil type, and climate at existing planting trials. When combined, the geographical and local data allowed foresters to generate a more specific profile of what species to plant, in any region or site in South Africa.

Afforestation, labour and poor-white resettlement

Afforestation proceeded hand in hand with trial and research, both to overcome obstacles as these arose, as well as to find new ways. Aside from technique and method, finding forest workers for the intensive manual labour involved in afforestation was a vexed problem for South Africa’s foresters, with no immediately available solution. In the Cape, some early plantations (such as Tokai, Kluitjes Kraal, and Fort Cunningham—see below) were established by using the labour of probationary prisoners and the inmates of rehabilitation

44 O’Connor, ibid.
centres, but mostly foresters relied on a mix of white, coloured, and African workers to do the unskilled work required. Workers tended nurseries, prepared the land (ploughing with oxen, or making planting pits by hand using mattocks), planted trees, weeded, and thinned. The opportunity to hire cheap labour aided public, and most especially, private tree-planting efforts for most of the twentieth century. Compared to other equivalent colonies, such as Australia, South African foresters probably benefitted from having to pay less for labour. South Africa’s leading expert on wattle, Ian J. Craib, noted in 1935, ‘South African plantations of wattle were only profitable because of cheap labour, indeed, these plantations would not exist without it’.

The employment of forest workers eventually settled into the apartheid system where most employees were contract workers, migrants from diverse ‘homelands’. Turbulence in the labour market, following the labour demand and high wages during the South African War and the reconstruction afterward, caused an ‘acute labour shortage’ in the rural economy of the Transvaal, but the passage of the 1913 Natives Land Act soon began to effect a flow of contract labour. In the Sabie area, population increase in the Lowveld, partly caused by evictions from state forest land, caused a gradual shift from the situation where migrant wage earnings supplemented the dominant agricultural income, to a predominance of wage income over agricultural income by the late 1930s. Contract workers for afforestation in the Sabie area would have come from sources such as the ‘released’ areas under governance of the chiefs or their equivalents, and, later, the communities on Trust land.

Though the department preferred to hire African or coloured labour to establish and manage plantations, various parliamentary decisions from 1916 onward increasingly required foresters to employ poor whites—an onus which bedevilled the afforestation program until foresters succeeded in incorporating a

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47 See R. N. Parker, *Eucalyptus Trials in the Simla Hills* (Calcutta: Government Printer, 1925), 1. Australia suffered from high labour costs owing to its high-wage White Australia policy. India had ‘cheap’ labour, but it was felt to be more expensive than that in South Africa.

48 *Fourth British Empire Forestry Conference*, 15.

proper scheme of white settlements into state forestry. All labourers, irrespective of race or ethnicity, faced the reality that forestry was one of the hardest types of work. The white labour settlement scheme drew upon a diversity of destitute people, mainly Afrikaners. Though many succeeded in progressing to a better life, white employees were often poorly endowed. At an inquiry, Legat was asked by the member of parliament Mr Waterston, ‘At the present time the Railway and Forests Dept [sic] are dependent upon the class of man who fails in every occupation?’ Legat replied, ‘Yes, the man who has been unfortunate’.

After the South African War and into the first decade of Union, at the start of the national afforestation program, the market for labour in South Africa was tight and very fluid, affected firstly by the aftermath of high wartime wages and then by the demands of the construction boom that followed. Department officials in the Cape Province and Transvaal tried to use prison labour (probationers from reformatories) in some instances, in order to not compete in localities with farmers in finite labour markets, but the Prisons Department did not always assure sufficient probationers for the department’s needs. When the Prisons Department did not give foresters the numbers they requested for Kluitjes Kraal (which was established and had been maintained since 1884 with prison labour and ‘inebriate’ labourers—alcoholics in rehabilitation—as well as ordinary hire from the labour pool), farmers at Tulbagh protested the department’s use of free labour, because the wages of the department, 2s/6d, were much greater than the

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50 For example, J. C. Heyneke, who had served as conscript with the armed forces during the 1922 Rand Revolt, came from a farming family forced to sell their farm in 1927 at the onset of the Depression; penniless after trying diamond digging, he joined the white labour settlement at Spitskop near Sabie in 1930, set up his own business in 1931, established his own sawmill in 1939, and became a leading figure in civil society. See, *Monumente Langs die Pad van J C Heyneke van Sabie Oos-Transvaal*, Sabie Doprsraad, Sabie Bosboumuseum, Pamphlet No. 51 (26 April 1984). 2. Transcript of interviews with Heyneke conducted by Curator of Sabie Forestry Museum. For a comparable story from Jonkershoek: E. J. Borchardt was quickly promoted to research assistant with J. P. Kleynhans, the forester in charge of Berlin State Forest from 1931 to 1936, regarded the white forest labourers to be generally ‘good types’, forced into the settlements by the Depression, and names several who progressed to positions of forest and sawmill foremen. ‘Herinneringe van die afgelope halwe eeu’, J. P. Kleynhans Sabie Forestry Museum, *Bosbouaanbrekers* Pamphlet No. B 18 (30 January 1981), www.routesmp.co.za/history.html?view=wbdsirmgr&option=com_wbdsirmgr&task=op en&fo=1%2520- %2520Mpumalanga%2520Historical%2520Interest%2520Group%252F1%2520-%2520Latest%2520Newsletters%252F (accessed 9 December 2013). The Forestry Schools at Tokai and, later, Saasveld also served as springboards for Afrikaner opportunity (see Chapter 3).

51 Evidence given by Chief Conservator Before Public Accounts Committee, 24 April 1925, E/40-1, FOR 364, NASA-P.

1/- plus food and wine (two bottles per day) that local farmers offered. Similar complaints came from national and district agricultural lobbies that worried about the state crowding out the private sector by paying more for workers.

The Union government’s rural white labour policy picked up from where the Milner administration had left the problem of relocating Afrikaner farmers and their families from the ruins of war, 200,000 in all, and of reactivating farming. As early as 1907, the Cape government had appropriated funds for employment of woodcutters on afforestation, but the Forestry Department was not ready and little came of this. The first forestry white labour schemes started in 1916, when poor white woodcutters from Knysna were settled at Jonkersberg and Franschhoek, and in 1918, the government made an ‘increased provision of funds for afforestation and for employment of white relief labour’. But progress with these two settlements was slow. Legat challenged the plan by pointing out that white labourers worked less efficiently, and for more money, than African or coloured workers. He asked parliament (unsuccessfully) to make special dispensations for employing white labourers because white labourers cost approximately two to three times more than African, coloured, or penal labourers, while their work output was often lower. Concerns about the higher cost of white labour continued throughout the 1920s.

In the early 1920s, the department’s afforestation program became firmly enmeshed with government attempts to solve the ‘poor white’ problem. This issue had deep roots, as Anthony Minnaar describes:

The unemployed rural poor, who accounted for the largest portion of the so-called ‘Poor Whites’, had been a problem for many years ... This problem was

53 Legat to Minister for Agriculture, 9 January 1922, A98/5, FOR 112, NASA-P. Twenty-four farmers from the Tulbagh area petitioned the Administrator of the Cape of Good Hope on 15 July 1910 against the department’s employing ‘free’ workers; A98/5, FOR 112, NASA-P.
54 Legat to Private Secretary for the Minister of Agriculture, 29 February 1928, E/40-1, FOR 364, NASA-P.
57 Ibid., 67.
58 Ibid., 67.
59 Ibid., 76. In 1917, Legat noted that in the Cape, ‘The Coloured community, who live side by side with the whites, and are to a very large extent debarred from work in the forests, except on occasions when sufficient white labour is not forthcoming, and who in consequence labour under very heavy disabilities, are steadily rising as compared with many of their poor white neighbours. It may be that the disabilities under which the Coloured population suffer are bringing to the surface the best qualities in the individual. The fact, however, remains that notwithstanding their disabilities they are slowly creeping into posts requiring more or less skilled labour, and that they are far more ardent cultivators of their lands and appear to be generally more successful in their agricultural operations than the poor white who still continues to look to the forest for his main source of income, and to the Government for doles’. See Union of South Africa, *Annual Report of the Forest Department For the Year Ending 31 March 1919* (Pretoria: Government Printer, 1919), 1.
60 Ibid., 2.
tied to that of a rural exodus to the urban centres, and in fact during the Great Depression the Poor White problem became more one of white unemployment and the two problems were often regarded as one.

... Besides the drift to the urban areas of the rural poor the ranks of the unemployed were swelled during the Great Depression years by the thousands of small white farmers and their labourers driven off the land and into acute poverty by the combined economic effects of the Great Depression with its prevailing low prices for agricultural products. It was also a period of prolonged drought (the so-called ‘Great Drought’ of 1931-33), largescale foot-and-mouth disease outbreaks, countrywide locust infestations and in 1934 widespread floods—all of which impacted negatively on the levels of employment in South Africa. In addition, the almost total collapse of the diamond market led to an influx of large numbers of small independent diamond diggers and their families ...

The stream of those leaving the farms to find other employment, mostly without the requisite training, had, in the course of the Great Depression, become so large that the urban areas found it difficult to absorb them ... This movement to the towns had swelled as the countrywide drought worsened ... There were persistent calls on the government to discourage this urban drift.61

In 1922, the department committed to planting 10,000 acres per year, a target that required a large labour force.62 The expansion of plantations fitted neatly into efforts to solve the ‘poor white question’, an issue that became an important political platform of Afrikaner politicians in the 1920s and 1930s as they campaigned in the interests of poor white voters. The program also reflected wider concerns about racial mixing and the abject poverty of many of the poorest Afrikaners. Vocal Afrikaner nationalists expressed concern that racial mixing, especially in Knysna, undermined white rule.63 Politicians turned to poor white resettlement and labour schemes as a way to pull whites out of poverty and to demarcate racial boundaries which they believed had become blurred by impoverished economic conditions, while foresters—leading figures among whom were sympathetic to the plight of the woodcutters—began to see settlement programs as helping to solve the Knysna woodcutter problem. The government pressed foresters to take on white labour settlements the moment new land had been purchased for afforestation, and afforestation plans and procedures suffered as a result.64

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Whereas prior to 1922, most white forest settlers came from the George–Knysna and the agrarian Orange Free State and Transvaal, an expansive program of white resettlement and employment preferences developed in the early 1920s, as a result of a series of mining strikes in the Rand that threatened national political stability. At the heart was a conflict between higher-paid, skilled white miners and the unskilled, impoverished Afrikaners drawn to the mines from a rural economy devastated by drought, the Rinderpest and war, having to accept ‘very low’ wages or remained unemployed; a ‘situation rotten to the core’, in Jan Smuts’ words. Also, skilled white workers resented being undercut by Africans working for lower wages as the mining houses reduced production costs. South Africa’s mining industry at the time was in a deep recession brought on by the fall of gold prices. Union-led agitation culminated on 2 January 1922 in a miners’ strike, led mainly by English speakers but involving many Afrikaners, and which, though quickly suppressed by the authorities, had profound consequences. When negotiations between strikers and employers broke down in February 1922, strikers proclaimed a general strike on 6 March. Revolt by 10,000 armed and organised strikers followed soon after. Revolutionaries among the strikers shut down the city and besieged key infrastructure, such as police stations. Smuts called out the army and air force, and applied martial law to put down the insurrection. Over 200 people were killed before the strike was lifted. In the aftermath, 15,000 lost their jobs on the mines.

As a way to alleviate further conflict (and the problem was soon aggravated by the Depression), the Smuts government created a white and coloured (but not African) labour bargaining system and developed a policy of preferential white labour employment in the rural sector. The rural program would employ whites, who included woodcutters but also many from recent migrants to the cities, and returned soldiers. Smuts and the South African Party lost at the 1924 election to the Nationalist-Labour Pact, which placed General J. B. M. Hertzog in power as South Africa’s Prime Minister from 1924 to 1933. The Hertzog government pursued the white agrarian program with greater intent, with the initial program aimed at including forest stations as training grounds to move poor whites onto permanent agricultural settlements.


Although white settlers were never the majority of unskilled employees in the department (in 1934, at its height, the program employed 1,354 white forestry settlers, 18 per cent of the establishment of 7,577 unskilled employees), 68 foresters and other technical experts chafed at being burdened with a political mandate that strained finances as well as their operational capacity. The Department of Forestry, the Department of Railways and the Department of Irrigation expressed concerns about the inefficiency of Hertzog’s scheme. Legat supported white settlement in principle, but argued that it ran contrary to the original terms of afforestation policy, namely that plantations should return a profit. The costs of white labour meant that afforestation effectively became a social rather than an economic issue. 69 Legat wanted the government to make this an explicit policy, so as to relieve the department from criticism for failing to make its plantations profitable when they could not. The attempt by English-speaking officials did little to convince Hertzog or other Afrikaner politicians who sought to uplift their constituents. The argument that white labour cost too much bore resemblance to the policies used by English-speaking mining magnates before the Rand Strike of 1922.

In 1923, the department transferred Johan Diederik Möhr Keet from his post as District Forest Officer for the Knysna District, to Pretoria in the post of Conservator of Forests for Transvaal and Orange Free State, and from this time on, Keet played a central role in the afforestation program. Keet was born in 1882 in the Afrikaner community of the small agricultural town of Ceres in the Cape Colony, into a family descended from German settlers at the Cape of 1742. Little is known of his youth; he matriculated at the age of 18, and somehow offended the authorities during the South African War, since he was interned by the British authorities for a year during the war (probably in the camp at Tokai, where recalcitrant Cape Afrikaner civilians were held). After his release, he worked for a time on a farm and then entered the South African School of Forestry at Tokai in 1906, receiving his diploma cum laude two years later; his record there includes commendation for his interests in nature, and especially trees. (Keet’s interest in botany and ecology was lifelong; he discovered species new to science, had a genus in the coffee family, Keetia, as well as a wood-rotting fungus, Trametes keetii, named after him, and he had many tales to tell of traditional knowledge of plants and timber.) He took up an appointment with the Cape colonial administration in 1908. In 1931, he was appointed Chief of

68 Keet, ‘Historical Review of the Development of Forestry in South Africa’, 84. By 1949, there were just 58 white labourers in the settlements, while daily-paid employees numbered 17,453. See ibid., 58. By 1933, the employment level of 1,340 was just 5 per cent of the total in government unemployment relief schemes. See Minnaar, ‘Unemployment and Relief Measures During the Great Depression (1929–1934)’, 54, 65.
69 Legat to Minister of Agriculture, 19 September 1925, E/40-1, FOR 364, NASA-P. Also see Reekie, ‘The Wood from the Trees’, 81.
the Division of Forest Management under the direction of F. C. Geldenhuys, and then as Director of Forestry in 1934. From 1923 he was at the centre of all the strands in the development of forest policy, science, and practice in South Africa, until his retirement in 1942. This included the drafting of the *Forest Act* of 1941, and after retirement, the *Soil Conservation Act* of 1946. As Conservator of Forests and after, he was charged with the largest public afforestation program in the country’s history, and his energy and endurance in the field and at his desk was legendary. Keet, closely acquainted with the woodcutter communities (see below), involved himself directly in the development of the white labour settlements.

During 1929, Keet worked with a team including the architect of the Public Works Department, the government health officer, and the welfare officer, touring the Sabie projects, planning the new settlements. ‘This was the first time in the history of the program that individuals from these Departments had met before the establishment of a settlement, examined … and together, chosen a site’. Keet reviewed the plan, making adjustments to fit local conditions, and from this came an integrated village plan for the Tweefontein settlement, with a tree-lined avenue, water supply plan, and the forester to live within the community. The Tweefontein design was then copied for other later settlements.

From 1925 to the early 1930s, the forest settlement program expanded rapidly. The poor whites who worked for the Forestry Department came primarily from rural rather than urban areas. These included failed farmers and displaced woodcutters from the Knysna forests, whose numbers with access to the forests for timber extraction had been steadily reduced after decades of conflict, with the last leaving Knysna in 1939. By 1925, 1,074 families had been settled, with accompanying settlement support staff. They lived in villages

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72 Grundlingh, “‘God Het Ons Arm Mense Die Houtjies Gegee’”; Keet, ‘Historical Review of the Development of Forestry in South Africa’, 264: reports a maximum of 2,000 woodcutters in the historical record, 1,500 by 1900, 1,269 registered in 1913 in terms of the new *Forest Act*, and 302 at de-registration in 1939 under the *Woodcutters Annuity Act*.

73 Ibid., 71, 73.
that included provision for staff, schooling, nursery, hygiene, recreation, water supplies, and other facilities. District foresters found themselves caught up in an accelerating project of establishing new forest villages, while having to manage expensive and often unfit and unwilling white workers in difficult terrain, without infrastructure and with as yet unproven forestry techniques. Land shortages occurred in forestry regions of the Transvaal in 1931, so that for a period the department lacked adequate land for afforestation and for the settlements, but during the Depression land did become available, which the department could acquire ‘at very reasonable prices’.

Afforestation expanded at a rapid pace from the mid-1920s to the early 1930s in parallel with the white settlement scheme. The rate hovered between 12,000 and 14,000 acres per year, with a peak of 15,642 in 1927. Suitable afforestation sites had to be purchased because most of the state forest land in the Cape and Drakensberg mountains was in unsuitable locations. Foresters looked primarily to the uplands of the eastern and northern Transvaal, especially centred on the town of Sabie. The department built several successful settlements in this area between 1929 and 1932, establishing the equivalent of a small town in the space of four years (Table 1). There they purchased land for afforestation that was freely available on the open market in this region, since the properties in areas suited to afforestation were not well suited to farming, often found no private buyers, and were offered to the state. This included land that had been abandoned by returned soldier settlers. The department was pressed to provide for settlement as soon as it acquired land for afforestation.

74 Memorandum on Employment in Forest Work, 15 July 1931, E120, FOR 364, NASA-P.
75 Union of South Africa, Proceedings of the Fourth British Empire Forestry Conference, 27. Quoted from Keet.
76 Union of South Africa, Annual Report of the Forest Department For the Year Ending 31 March 1931, 9.
77 The rate of afforestation in acres per year was 13,232 (1925), 15,642 (1927), 14,420 (1928), 12,866 (1929), 14,231 (1930).
79 The Annual Report of the Division of Forest Management records an inspection of the forestry operations in the Sabie area by the Minister, General J. G. Kemp, after which he instructed the department to purchase farms on the eastern escarpment, previously held by returned servicemen, for the protection of indigenous forests and conservation of their water resources (including sources for the Kruger National Park). This instruction was followed by the acquisition of the properties, afforestation, and land rehabilitation programs. See Keet, ‘Historical Review of the Development of Forestry in South Africa’, 83. Kemp soon retired ill, to be succeeded by Colonel Deneyes Reitz, who, in his prior role as Minister of Lands, had promoted the establishment of the Kruger National Park in 1926.
Table 1. White labour forestry settlements in the state forests in the region of Sabie, eastern Transvaal.

<table>
<thead>
<tr>
<th>Location of settlement</th>
<th>Date established</th>
<th>Number of family units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coetzeestroom</td>
<td>1929</td>
<td>100</td>
</tr>
<tr>
<td>Tweefontein</td>
<td>1929</td>
<td>125</td>
</tr>
<tr>
<td>Ceylon</td>
<td>1929</td>
<td>120</td>
</tr>
<tr>
<td>Bergplaats Extension</td>
<td>1931</td>
<td>50</td>
</tr>
<tr>
<td>Blyde</td>
<td>1931</td>
<td>50</td>
</tr>
<tr>
<td>Spitskop</td>
<td>1931</td>
<td>100</td>
</tr>
<tr>
<td>Swartfontein</td>
<td>1931</td>
<td>100</td>
</tr>
<tr>
<td>Witklip</td>
<td>1931</td>
<td>25</td>
</tr>
<tr>
<td>Brooklands</td>
<td>1932</td>
<td>100</td>
</tr>
<tr>
<td>Bergvliet</td>
<td>1932</td>
<td>80</td>
</tr>
<tr>
<td>Malieveld</td>
<td>1932</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>869</strong></td>
</tr>
</tbody>
</table>


**Conclusion**

From the early 1900s, foresters in South Africa were willing, if sometimes critical, partners of a developmental program driven by the minerals revolution, race capitalism, social engineering, and environmental idealism. Forestry was a cauldron of ideas, but also disciplined by stringent budgets, the intellectual and pragmatic demands of innovation, and the drive to achieve the forestry statutory mandate. By 1935, leading foresters had learnt confidence from their successes over the preceding three decades. Establishment of the new Forestry Department in the Union government had gained a secure start by having Cape foresters fill the leading positions, and the 1913 *Union Forest Act*, modelled on the 1888 *Cape Forest Act*, soon provided a coherent legal framework for forest management across the country. However, the wider policy environment, largely given substance by the Milner administration, was at a deeper level characterised by the disrupted rural economy, poverty and migration in the aftermath of the Rinderpest, droughts, and the catastrophe of the South African War. Subsequent developments proceeded in a large degree subject to the direct and indirect demands of the Union’s mineral economy, but also in response to government social policies. The Forestry Department had almost immediately had a policy of afforestation approved, while extending its program of protection and management of indigenous forests to reach across the previously underserved
provinces. Within a few years, a national drive to set aside and protect mountain catchment areas gained momentum, and the department received responsibility to manage a larger percentage of the country’s mountainous areas.

Forestry was drawn rapidly into the politics of rural development and the politics of Afrikaner identity. The most visible manifestation of this, the white labour forestry settlement scheme, while leading to only about 20 per cent of the department’s employees being drawn from resettled whites, nevertheless absorbed a disproportionate part of managers’ attention. On the other hand, foresters with partners in government succeeded in creating social conditions in forestry settlements highly favourable for settlers’ own development. This was at a time when foresters confronted a complex array of intermeshed problems coming from the ambitious program to develop extensive sawtimber plantations, and from all the gaps in knowledge revealed by the domestication of tree species not previously cultivated. Earlier and current investment in advanced education, often at leading institutions overseas, had equipped the department with a leadership group that had the enterprise and determination required to endure a difficult period and to research the innovations needed for progress, while competent field managers trained in South Africa could see to on-the-ground development.