CHAPTER 7

Creating a Model Colony

Little is known about Zacharius Lewala. He was a black laborer from South Africa who had worked in the diamond mines of Kimberley. That experience probably helped him recognize a shiny stone one day in April 1908. As a migrant worker, Lewala had been employed in the construction process of the rail line stretching into the desert from Lüderitzbucht. Commissioned to keep the sand off the tracks of the southern railway,[1] he found himself near the Grasplatz railway station near Kolmanskop in spring that year, about seventeen kilometers inland.[2] There, he spotted a one-quarter carat diamond simply laying in the hot desert sand.[3] Lewala handed the stone over to his supervisor, chief railway foreman August Stauch. The latter began quietly buying up mineral rights while awaiting scientific results. He ended up with sixty-three fields for himself, soon a millionaire and "frontier tycoon."[4] Lewala, later portrayed as a businessman with a suit and tie in the magazine *Kolonie und Heimat*,[5] got a job at Stauch's company. That is it.[6] Yet following a war that contemporaries soon defined as a necessary baptism by fire,[7] Lewala's discovery of diamonds marked a turning point and juncture.[8] Now, to follow that colonial narrative, the Sleeping Beauty among the colonies could finally awake from its "deep sleep" to truly blossom.[9] Southwest Africa was open for business.

German efforts to fully transform German Southwest Africa defined the postwar period. Grounded in *Rinderpest*, genocidal warfare, and forced labor, Germans now felt they had the blank canvas for a complete makeover. After all, the government had acquired a total of forty-six million hectares of land formerly utilized by Herero, Damara, Nama, and San people. Farms almost tripled, from 480 German farms before the Uprising to 1,331 farms by 1913.[10] Investments began pouring in as well. Those funds were intended to turn barren and arid lands into productive *Kulturlandschaften* (cultural landscapes) for whites. As one narrative from the time has it, "The soil is pleading with observers to be utilized. . . . Be patient, you steppes and meadows, the culture bearer, man, will arrive."[11] In that story, German blood had virtually soaked and fertilized the soil,[12] and now provided the basis for a once colonial *Sorgenkind* (problem child) to finally grow up.[13] Chapter 7 focuses on that postwar

process: the expansion of landing structures, railways, and irrigation systems; animal transfers and engineering; as well as the cultivation of plants. While some contemporaries favored resource extraction over cattle farming or agriculture, all agreed when it came to creating reliable access and the need for solving the water question. Environmental infrastructure, defined by human agencies such as labor or the commodification of certain products, as well as natural factors, shaped processes that colonial narratives portrayed as the creation a new home abroad. After all, and according to those advertising the empire, "Southwest Africa more than any other of our colonies is suitable to become a *Heimat* homeland for families and to provide well for them."[14]

The following discussion is organized along four main sections. It begins with an exploration of different visions of the colony. Debates at the time reached from prioritizing the extraction of raw materials to cattle farming and agriculture, all understandings grounded in environmental infrastructure and the exploitation of African labor.[15] The next part then focuses once more on access into the colony. Germans poured millions into landing structures and railways. They were confident their ingenuity would clear up bottlenecks and allow exports to reach world markets. Efforts to solve the water question—including the use of drilling and dam-building crews—are in the center thereafter. Here, administrative energies and organizational structures are most prevalent. After all, cattle farming and agriculture in particular depended on water. A final section concentrates on livestock farming and agriculture, including the introduction of new animals, plant cultivation, and afforestation. Government-funded experimental stations and other subsidies, combined with landing structures, railways, and irrigation, increasingly promised German farmers countless new opportunities.

Visions of a Model Colony

The *Versuchsstation* (experimental station) Neudamm near Windhoek was among the most active when it came to the creation of a sustainable agricultural colony.[16] Colonists had long tried to figure out what could be grown in Southwest Africa. After individualized efforts and the investments of some private entities, the late 1890s witnessed a more comprehensive approach. Efforts had come to fruition in Germany with the formation of the Deutsche Kolonialschule für Landwirtschaft, Handel und Gewerbe (German colonial school for agriculture, trade, and industry) in 1899. Characterized as promoting scientific colonialism, and meant to train farmers, cattle breeders, and agriculturalists, its curriculum had an eye on future settlements in German Southwest Africa.[17] To prepare women for empire, and to help deal with a shortage of women in the colony overall, the Deutsche Kolonialfrauenschule (German co-

lonial school for women) opened in May 1908.[18] Such infrastructure expanded over the years, soon reaching into Germany's settler colony. There, in Southwest Africa, all kinds of operations popped up. *Forstgärten* (forestry gardens), *Versuchsgärten* (experimentation gardens), *Versuchsstationen* (experimental stations), and *Tropengärten* (tropic gardens) opened in Windhoek, Grootfontein, Bethanien, Gobabis, and Klein Windhoek.[19] In Neudamm, the colonial government contracted farmer Albert Voigts to build a dam,[20] the only such structure the German administration had funded by the turn of the century.[21] After setbacks due to the 1904 war, the rebuilding process and expansion of "real experimental station" took off.[22] Experiments now included a whole array of potential cash crops such as coffee, rubber, tobacco, and cotton; colonists also experimented with endemic plants such as !nara-melons, fruits from palm trees, salt bushes, and seeds from the *Weltwitschia mirabilis* plant.[23] Elsewhere stations looked specifically into afforestation—in the fiscal year 1911/12 alone, the entirety of such stations delivered 58,975 young seedlings to private entities.[24] The *Lehrfarm* (training farm) in Brakwater became a hub for young German women to learn about daily life in the colony.[25] Then there were experiments with livestock such as the sheep farm at Fürstenwalde, ostrich breeding in Otjituezu, and a veterinary institute in Gammans originally established following the *Rinderpest*.[26] Several editions of the "official manual for emigrants" to Southwest Africa soon gave newcomers detailed advice on settling and farming.[27] The Germans had big plans for the colony's future.

Discussions had long lingered around the question of what kind of colony Southwest Africa would turn into. Would its seal show an ox for cattle farming or corn for agriculture?[28] How would the colony become profitable? The liberal newspaper *National-Zeitung* had posed the latter question as part of a competition in its 1906 Christmas edition.[29] Soon experts and laymen alike chimed in and catapulted these matters further into the limelight.[30] Discussants wondered about priorities and proper size of farms; they also pondered the role of raw materials. In a way, three entangled visions of the colony emerged: resource extraction, cattle farming, agriculture. First, there were those dreaming of raw materials. Adolf Lüderitz had come for such riches. In 1898, some had already been certain that the discovery of diamonds was just around the corner.[31] Descriptions of mining towns amid the Namib Desert speak volumes about such imperial fantasies. Failures, on the other hand, were generally blamed on "difficult circumstances rather than the environment of the land."[32] Mining experts at times found lead, tin, and iron ore; they were also confident regarding potential deposits of coal and gold.[33] Although one publication noted that a dose of "indestructible optimism" is vital for anyone searching for raw materials in Southwest Africa,[34] in the end, few of such hopes materialized. Deposits were often small and problems tied to accessibility and labor made them unviable.[35] The extraction of marble and copper had some poten-

tial, the latter with a long history in the region.[36] Initially, a low copper price, cone-shaped deposits with limited depths, and expensive transport routes to Walvis Bay limited options.[37] The foundation of the Otavi Minengesellschaft mining company at the turn of the century, and its subsequent takeover of some copper concessions, later fueled hopes once more. The construction of a railway from Swakopmund to Tsumeb, the colony's most profitable location, had begun in 1903, disrupted briefly by the war.[38] Withdrawals reached 21,000 tons by 1906/7.[39] Yet this was not comparable to the diamond boom. Experts and prospectors had long hoped for these precious stones, especially given deposits in similar geological formations and landscapes in neighboring South Africa. After Lewala's discovery countless adventurers flooded Lüderitzbucht and turned it into a "transnational space."[40] Whereas some authorities worried about drunkenness, prostitution, and the overall deterioration of social order and racial lines,[41] missing infrastructure and a lack of labor most worried those hoping to further development.

A second vision for the colony's future pushed for cattle farming. In line with historic land use, arguments circled around farm sizes, the role of water and fodder, and markets. Geographer Paul Rohrbach became its strongest and most influential advocate.[42] Settler commissioner from 1903 to 1906, and widely involved in colonial affairs as a writer and lecturer focusing on colonial economy thereafter, Rohrbach traveled extensively throughout the protectorate during his tenure. Although he criticized Lothar von Trotha's extermination policies on economic grounds—Southwest Africa depended on cheap labor[43]—his own vision of the colony's future also had little room for the local population. According to Rohrbach, economic prospects were deeply tied to geographic circumstances and race.[44] Since the interior provided few opportunities for large settlements, and because irrigation could at best sustain agriculture and gardening for some hundred families in small homesteads, for him the solution lay in cattle farming. In his view, large-scale estates inhabited by a new elite—middle-class and almost knight-like landlords—could also spread Germandom. Their strong cultural background and steady character could withstand foreign natures, climates, and peoples.[45] Fifty million hectares of farmland meant for three million cattle and twenty million small livestock was his vision—if the water question could be solved.[46] This "mixture of manor and farm,"[47] to borrow Kundrus's phrase, had some support among farmers.[48] Overall, it encapsulated an elitist vision of the colony's future that seemed to have much more in common with Teutonic Prussian rule in the East than with settler colonialism in Southwest Africa.

Lastly, there were voices promoting broader transformations of landscapes. Equally endorsing the importance of working the land, they felt that there were many more opportunities in Southwest Africa than met the eye. Kurd Schwabe, colonial soldier and official in Swakopmund, Otjimbingwe, and

Okahandja, spoke out against the mockery of the German colony as a desert wasteland. Although acknowledging the difficulties regarding access as well as idiosyncrasies of the region and populations,[49] Schwabe emphasized a variety of opportunities reaching from cattle farming to agriculture: "Gardening can be done with lots of success; grain only in certain areas and in the future where the suitable land can be artificially irrigated and made fertile."[50] In his view, drilling, damming, and irrigating would do the trick, and allow for the production of fine wines, dates, figs, cotton, tobacco, wool, and more. "Sure, even German Southwest Africa extends into sterile desert regions that appear dismal," he admitted, "but these [areas] only mark an unsightly shell of a golden core."[51] References to stories of successful transformations served as evidence to sustain these claims. At Farm Schlangkopf near Keetmanshoop a lack of water had originally crushed plans put forward by a large trading company. Two German farmers, however, who had recently migrated from Transvaal, had unearthed a source of water and built a successful farm from the ground up.[52] It helped that colonial officials such as Deputy Governor Oskar Hintrager remained particularly dedicated to turning the colony into a white agricultural paradise.[53]

All three visions of, or priorities for, the colony's makeup agreed on the importance of landing structures, railway lines, irrigation schemes, and cheap labor; all also planned with government support. Copper and diamonds had to be accessible and needed to be exported. The same applied to produce and cattle. Harbors and trains were thus a must. Solving the water question was also essential, from having access to drinking water to irrigating gardens and fields. Of course, mining required much less water compared to cattle farming and certainly major agricultural operations. Still, workers needed to drink and diamonds had to be washed. "Even I," to quote one voice from the time, "would have exchanged the most beautiful diamond for a refreshing drink of water (even if that Lüderitzbucht condenser-water)."[54] Finally, commercial farming and mining wanted cheap labor. The construction and maintenance of harbors, railways, and irrigation schemes equally needed workers. Since few settlers would leave their homeland only to scuttle on desert sands searching for diamonds, it would fall on the African population long deemed inferior to provide the needed workforce. To quote one contemporary, "Even the construction of infrastructure, that comes first in the development of the country, is only possible based on the labor of the natives."[55]

The solution to the labor question had already begun. Kru men had long unloaded ships landing in Swakopmund and Lüderitzbucht. During the Uprising, the concentration camp system had delivered African bodies to turn imperial visions into realities; the latter had also helped build landing structures and railways. Kru men stuck around after the Uprising. As outlined by one scholar, "West African migrant labourers who came to the colony in the

1890s were essential to the development and maintenance of the German colonial infrastructure before the First World War."[56] Such German dependencies gave Kru men leeway. At least one German observer was surprised to see them use the tools of the modern class struggle.[57] Yet it was the dramatic loss of life during the war that most directly resulted in labor shortages.[58] Colonial ordinances and laws tried to step in. In August 1907, the German colonial government institutionalized the *Eingeborenen-Verordnungen* (indigenous ordinances). Meant to cement the subjugation of Africans and create a permanent pool of black laborers, these laws basically barred non-whites from the ownership of cattle, land, and the freedom of movement; black Africans also had to carry so-called *Passmarken* (passes) at all times to limit what contemporaries called "vagrancy" and "vagabondage."[59] Of course, Africans technically were allowed to choose their employer; plus, they also tried to avert and subvert government oversight, with some still owning cattle, for instance.[60] Several escaped into the veld as well, a move that largely depended on the amount of seasonal rainfall.[61] According to one disgruntled farmer writing in March 1908, "from every farm people fled, after all they were allowed to do so now and were secure from punishment. Who would be so stupid under these circumstances to punish his workers. Then they really don't want [to work], they cause trouble and harm. Finally they run away and that is the worst."[62] A lack of workers after the war, combined with African resistance, eventually forced the colonial government to consider importing contract labor, especially given growing demands following the discovery of diamonds, the expansion of copper mining, and the construction of railways.[63] Migrant workers from the British Cape Colony provided one solution. Higher pay and above-ground work compared to mines in South Africa might have pulled sixteen-year old James La Guma to work for Southwest Africa's diamond industry.[64] Among workers from the Cape Colony he had a third party that could theoretically intervene on his behalf—a factor that probably encouraged the German colonial government to recruit labor from the north of the colony as well.[65] There, at the border with Angola, and thanks to their reliance on autarkic agrarianism, the Ovambo had so far been largely independent.[66] However, once drought, locusts, and floods brought famine to that area thousands found themselves trekking southward to work in the diamond fields.[67] According to one estimate, in 1910 alone five thousand Ovambos made that journey.[68] Many times, and given other demands and responsibilities, it seems that they only signed up for six months during the winter. Overall then, individuals such as Rohrbach and Governor von Lindequist might not have agreed on specific settlement policies, farm sizes, the prioritization of cattle farming over agricultural schemes, or the value of large-scale infrastructure projects; yet they did agree on the need to solve the labor question based on the creation of a permanent black underclass.

Constructing the Future

His visit to German Southwest Africa had been all over the news. Bernhard Dernburg, a liberal politician meant to bring a more practical mind to colonial affairs, had become Germany's first colonial minister in 1907.[69] A larger debate about funds for the colonies had led to the dissolution of the German parliament by Chancellor von Bülow and the notorious 1907 "Hottentot elections." Although willing to sustain funding for the railway expansion from Kubub to Keetmanshoop, Social Democrats and the Center Party had refused to support funds for military operations.[70] Subsequent elections and the eventual formation of the Bülow Block Coalition, which supported investments in the colonies, also brought the creation of the Imperial Office headed by Dernburg. After his initial travels to German East Africa in 1907, Dernburg came to Southwest Africa from May until August 1908.[71] Accompanied by fellow banker and politician Walther Rathenau, the mission's objectives were "to study the British native police, the experiences in exploiting water resources and the possibility of reducing the colonial budget by extending the railway lines in the South West."[72] Dernburg was a banker and economist with a background in restructuring businesses; he was also someone with an eye on protecting the diamond industry from DeBeers.[73] Dernburg knew that investments into "modern means of development"[74] were essential for the future of the colonies. The Colonial Institute in Hamburg, founded in January 1908 and meant to train future colonists, certainly spoke to his support for broader structures. Although his confidence seemed to wane slightly once visiting the region in person,[75] calls tied to investments into infrastructure were now heard in Berlin.

There was certainly much to do in Swakopmund. Landing structures, for once, had been an embarrassment for some time. Although increasingly described as Southwest Africa's *Haupthafenstadt* (main harbor city),[76] rafts, a silted-in concrete pier, and a wooden jetty destabilized by the shipworm painted a worrisome picture. As one traveler wrote in 1906, "The immigrant loses heart once he sees the sandy, barren coast of Southwest Africa from the ship for the first time, and that is particularly the case at the sight of Swakopmund, which makes a grim impression with its bleak sand dunes in the background and the steady raging surf in front of it. Even the courageous are captivated by the mild creeps because they have to cross with an open, shaky boat; already many happy human lives have fallen victim to it."[77] Two years later a description noted how boats were still "subject to the ocean's whims."[78] Luckily the 1907 budget had earmarked funds for Swakopmund's harbor.[79] Plus, Dernburg had outlined "an easy solution" when pointing to the continuing modification of the existing wooden pier.[80] Yet by 1908 a report in the *Deutsche Kolonialzeitung* newspaper noted that "it might be necessary to renew the pier in a couple of years because of the prevalence of the naval shipworm in the

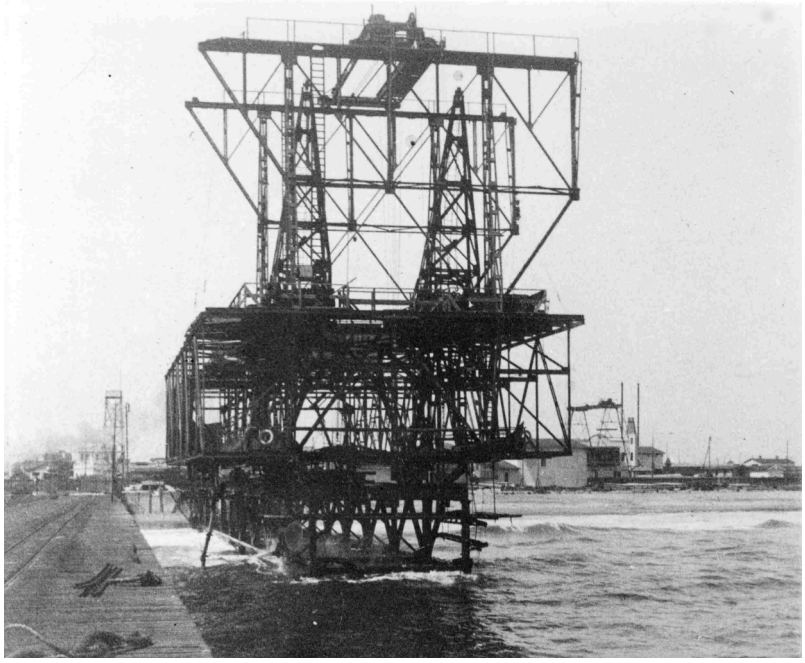

Figure 7.1. NAN 29511, "Swakopmund jetty with cranes [191?], photographer Paul Reinhard Petzold," courtesy of the National Archives Windhoek.

harbor."[81] As indicated in chapter 5, debates about a more sustainable solution took place thereafter, including in parliament.[82] Government building officer Kummer's idea of a spur dike meant to divert sand gathered the most attention and support. Kummer had suggested the construction of a jetty structure that would later be converted into a spur dike to limit silting-in; an additional extension of the *Mole* could be added later as well.[83]

Eventually officials endorsed the construction of a metal jetty.[84] Work crews arrived in November 1911 and assembly commenced in 1912. Projections estimated a timeframe of about three and a half years and costs of 3.5 million Marks.[85] Slowly and steadily, and again built in part by African labor,[86] a pier grew into the rough and sandy waters of the Atlantic Ocean. Plans envisioned reaching 640 meters into the ocean crossing breakers to ease the landing process (Figure 7.1).[87] This was a massive project, a major investment in the colony's future. It was about time. In late July 1911, the tugboat *Windhuk* of the Woermann-Line had sunk. Three massive waves had hit it with full force, capsizing the boat rather quickly. Three men died, a machinist and two Krumen.[88] In another instance, an anchor chain had ripped due to strong currents. The

fishing boat *Möwe* was lost.[89] Just observing the "interesting spectacle" as sixty-nine Argentinian horses and 303 mules arrived using rafts gave anyone the chills.[90]

A similar situation unfolded in Lüderitzbucht. Although some thought updating the natural harbor would be easy, realities on the ground turned out to be complicated, especially after the arrival of the shipworm. Countless reports and the aforementioned diaries outlined efforts put in place to monitor the infestation. By 1907 it became increasingly clear that the safety of structures was in jeopardy.[91] Proposals included a metal jetty. Even the idea of building a cable-car that would reach into the ocean made the rounds.[92] Additional surveys, delays, debates, and threats of shutting down landing structures slowed down any decisions thereafter.[93] In 1908, Hans Berthold, the correspondent for the magazine *Kolonie and Heimat*, pointed to the need to update landing structures to make Lüderitzbucht profitable. He stayed optimistic: "Regardless of all the suffering of the present, it is absolutely certain that the Lüderitzbucht location has still had a bright future."[94] Yet the availability of land on the central plateau following the defeat of the Herero, lingering fears about continuing insurgencies in the south and a diamond boom that needed small volume for export fetched few investments.[95] Accidents thus continued to happen, such as in September 1911 when a German sorter and two unnamed Ovambo workers drowned at the northside of the Roberts Harbor; that same month prospector Arthur Beck and two horses also died.[96] As late as 1913 the landing situation in Lüderitzbucht remained "unsatisfactory."[97]

Diamonds helped when it came to funding investments; those also required their own structures. After the discovery of diamonds in 1908 hundreds of claims had resulted in an uncontrollable boom. For one, Lüderitzbucht changed overnight. It had consisted of "little more than a forlorn collection of corrugated iron huts clustering around two of the more important buildings, dignified by the names of 'hotel,' 'store', and 'custom house.'"[98] Now a haste set in. A "stream of suspicious elements" rushed into town hoping to find diamonds and make money, to follow one newspaper.[99] Water prices skyrocketed, with the price per gallon reaching one mark.[100] Colonial Secretary Dernburg, keen on controlling the diamond industry together with the giants of the German banking industry, issued a decree in late September 1908 that established a *Sperrgebiet* (forbidden zone). At more than 25,000 square kilometers, this strip along the coastline covered much of the Namib Desert in-between the Orange River and Lüderitzbucht.[101] As individual prospectors diverted northward, supplies and equipment began reaching the sealed space via Sandwich Harbor, Conception Bay, and Meob Bay. Traveling along the coastline was still dangerous. Take the story of steamer *Eduard Bohlen*. Now sitting more than 390 meters in the notoriously harsh Namib Desert,[102] it was originally launched in Hamburg in 1891. Built by the prestigious Blohm and Voss ship-

yard, this steel-hulled steamship had served as the first prisoner-of-war camp for those Herero living in Swakopmund during the Uprising.[103] On the way southward to deliver mining equipment in September 1909, and about ninety meters offshore near Conception Bay, it got stuck in the breakers, unable to be freed.[104] The abandoned wreckage, purchased and salvaged by a former passenger, later housed miners,[105] likely Ovambo migrant workers employed in the diamond industry.

Mining settlements such as Holsatia, Charlottenfelder, and Grillenberger, spaces still visible in the midst of the Namib Desert,[106] tell stories about remote places and structures where African labor yet again compensated for the lack of access. Theoretically, diamonds just laid on or near the surface. That encouraged the satirical magazine *Simplicissimus* to include a sketch showcasing that even a blind pig could find them.[107] Yet such work was much more difficult. In the absence of machinery, and given that wind constantly covered the prize, Africans searching for diamonds had to crawl through the hot desert and move massive amounts of sand by hand. Conditions on site were terrible. Diseases ran rampant and harsh punishments were the norm. Following a gruesome two-week journey to Lüderitzbucht, Ovambo workers from the north had to make do with little once on site. They then laid face-down more or less breast stroking like swimmers through hot sand trying to spot the precious goods (Figure 7.2). The water supply was insufficient as well, both for washing diamonds and for drinking—how to turn "our diamonds into water" was a major question at the time, to quote one contemporary observer.[108] For African workers that meant they had "to drink the water used for pack animals,"[109] to follow one scholar. All of that seemed counterintuitive given the lack of labor. However, it was not surprising when thinking about underlying racism and the history of brutality in the colony. Ruthless punishment was widespread, and many Ovambo families back north would await the return of their men in vain.[110] Kolmanskop Diamond Mines had a death rate of about 10 percent in late 1911.[111] According to historian Steven Press, a confidential account points to a death rate of 45 percent at that site in a single year.[112] Not surprisingly, and in a sign of resistance, fewer workers showed up over the years, as news about the conditions in the diamond fields traveled back north.

Revenues meanwhile piled up even though smuggling remained rampant. Dernburg's scheme and the mere value of diamonds invited illegal removal; that stones initially loitered atop sands in vastly open spaces made control all but impossible. Steven Press tells countless tales of savvy smugglers foiling local officials; he also points to the dangers of the Namib Desert. The local police at times relied on camels for that reason.[113] Overall, however, millions still ended up in the coffers of a German consortium installed by Dernburg. Diamond extraction grounded in African labor was more than profitable. Up to now much more money had been flushed into Southwest African than came

Figure 7.2. 026-0362-04, "Primitive search for diamonds by indigenous people," undated, courtesy of the Universitätsbibliothek J. C. Senckenberg, Frankfurt am Main.

back. Diamonds changed all that. Some estimates note that their extraction contributed two-thirds of revenue toward the local budget (1909–13);[114] more recent discussions have convincingly demonstrated much more has been moved.[115] "In contrast with the economic fiasco of its early days," as historian Ulrike Lindner writes, "the colony was able to achieve a profit with diamonds during the last years of German colonialism."[116] While a few got incredibly rich thanks to Dernburg's schemes, the revenue was used to fund landing structures, railways, and later irrigation, thus underscoring the importance of diamonds for subsequent investments.

Apart from landing structures such as the jetty, money primarily went into railways. A Railway Memorandum had brought an array of investments;[117] there had also been a learning curve regarding structural issues, gauges, and the layout of tracks.[118] For one, workers partially retrofitted parts of the *Staatsbahn* into Cape gauge, a process that also included some rerouting due to previous misconceptions.[119] Elsewhere improvements came with modifications of existing structures, such as the Okahandja bridge.[120] Flash floods remained a concern, however. An entrancing black and white snapshot published in the colonial magazine *Kolonie und Heimat* in 1908 confronts readers with a lone man sitting atop washed-out railway tracks, gazing toward the onslaught of water and "cowering and dispensing any heroic pose," to follow a recent description.[121] A year later the Fish River came off "with rarely seen force," to quote one commentator.[122] In January 1912, two people died when a train traveling between Johann-Albrechts-Höhe and Karibib unknowingly crossed an embankment undercut by water and derailed.[123] The colonial records in Windhoek are filled with files discussing disruptions, accidents, and trage-

dies.[124] African labor yet again had to remedy these problems. In 1912, when water flooded the train station in Karibib it would be "blacks that carried arriving passengers to surrounding hotels," to reference one newspaper.[125] So-called *Stopfkolonnen* (plugging crews), which had been created to fix whatever issue,[126] relied on black labor as well, as did the construction of new routes.[127] Just for a section starting from Windhoek northward, three private companies employed 110 whites, 904 Transkei (from South Africa), and 1,450 indigenous laborers; the stretch leaving from Keetmanshoop employed 120 whites, 1,230 laborers from the Cape Colony, and 1,840 indigenous workers.[128] The mistreatment of workers was widespread. Take the experiences of James La Guma, a black worker from the Cape Colony previously mentioned in the context of diamond mining. He later recalled how a "burly overseer applied the stipulated number of strokes wielding a sjambok with sadistic vigour."[129] Some walked off the job in protest. At a construction site of the company Bachstein-Koppel in early October 1910, South African workers protested against terrible working conditions. The army ended up killing fourteen workers in what became known as the Wilhelmstal massacre.[130] By the end of 1913, there were a total of 2,104 kilometers of railway lines in use.[131] According to one commentator, once the water issue was solved, settlers would finally pour into the colony to "transform the wild land into a cultural or cultivated land."[132]

Solving the Water Question

Jose Rafael Perfecto Antonio von Uslar believed strongly in his abilities to find water. Born to the German consul general and a Spanish woman in Mexico City, his tenure in German Southwest Africa pushed dowsing into the limelight. At times known as water divination, dowsing refers to the employment of rhabdomancy, the use of a Y-shaped wooden stick or metal wire to find water. Although widely criticized by German geologists as a superstitious folk tradition, water divination had made a recent comeback. By 1906 none other than Kaiser Wilhelm II himself supported von Uslar's stint to Southwest Africa.[133] At one point during his time in the colony, and according to local newspapers, "captain [Victor] Franke, three corporals, three carts, . . . six natives," and four horses accompanied von Uslar.[134] The latter described his endeavors as "the life of a nomad" to friends back home.[135] He indeed traveled extensively, first in central Namibia, by October 1906 in the south before moving north again. Along the way he pointed to spots for drilling. Settlers had certainly been desperate for any help, including dowsing, thus once more underscoring the importance of the water question.

The imperial government had initiated and invested in drilling crews before von Uslar's arrival; after the conclusion of the Uprising, those efforts ex-

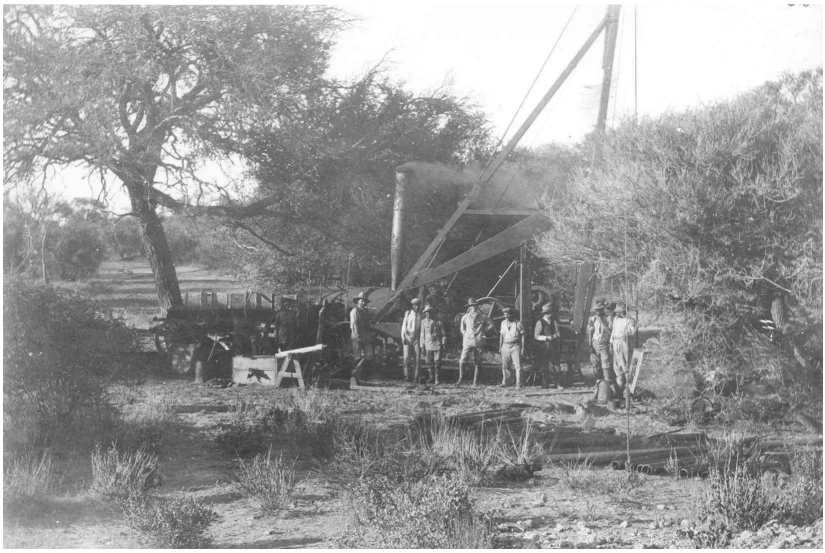

Figure 7.3. NAN 00518, "Boring for water on Farm Otjisoroe boring machine [1907]," courtesy of the National Archives Windhoek.

panded. Budgetary constraints had limited some investments before the 1907 elections.[136] Still, Governor Friedrich von Lindequist's *Comprehensive Plan for the Development of Water Sources* got approved by April 1906.[137] That blueprint included efforts to centralize drilling by relying on two drilling crews, one for the north and one for the south. Directly under the supervision of the governor, Geographer Heinrich Lotz, employed as the first government geographer in Southwest Africa since late 1903, supervised *Kolonne Süd* (crew south). Originally based in Lüderitzbucht (later Kuibis), Lotz was eventually replaced by geographer Paul Range. Victor Franke, the aforementioned official accompanying von Uslar, led *Kolonne Nord* (crew north) (Windhoek). Each crew included about six to nine drilling squads under the supervision of a drilling inspector. A drill or boring master, an assistant, an array of indigenous workers then made up each squad.[138] Geology was supposed to determine where to dig for water—unless an overconfident von Uslar stopped by.[139] The successful discovery of drinking water then became the basis for the construction of wells and possible irrigation schemes (Figure 7.3). Funding increasingly came from the charity lottery;[140] some assets were also specifically earmarked for the German colonies, including the solution of the water question.[141] Such financial assistance was desperately needed: locating water was expensive, as was getting it out of the ground.[142] A 1912 estimate noted that about 59 percent of a settler's capital alone—a whooping 6,600 Marks—went to the development

of a water source.[143] According to a newspaper article signed by "The average farmer," the costs for drilling for water were around 30 Marks a day.[144] As more settlers arrived in the colony, it became even more apparent that without government subsidies the transformation of arid landscapes into productive settlements would not be possible.

Drilling crews ran into all kinds of issues. The annual report for 1907 spoke of "satisfactory progress";[145] yet according to the *Deutsche Kolonialzeitung* newspaper, by 1908 initial meager investments had resulted in little overall success when it came to the solution of "one of the most important, if not the most important questions for the country."[146] Funds ran out as well. By 1910, Lotz and Rohrbach, among others, called for additional investments. They noted that "half measures and false frugality regarding the most important factor, the development of water, mean mostly throwing away money altogether."[147] Then there were uncertainties of where to dig. Expertise was hard to come by, particularly in remote areas. The groundwater also started to drop. According to an official bulletin, water once only "a few meters" deep now required drilling crews to dig between forty and fifty meters to find it.[148] One study from 1912 concluded that the whole situation tied to the solution of the water question stayed "unsatisfactory."[149] Whereas between 1906 and 1911 seventy water holes were drilled in the Okahandja District alone, twenty brought no water whatsoever—and eleven less than 2.6 gallons (10 liters) per minute.[150] Finally, there was the issue of labor. As one young economist visiting the colony noted in 1906, "the real problem … has always been not only how to find the white man to settle the country, but quite as much how to find coloured labourers to support them when settled."[151] Although few African workers wanted to travel to remote spaces under the strict and brutal supervision by German foremen, ordinances often left them with few alternatives. An incident from September 1913 vividly underscores the violence present at many work sites. According to a police report, Berseba-Nama Kakub, pass no. 4418, did not want to work. At least the report talks about his "cheeky" response when he supposedly pointed out "that is not my job but the job of the drillmaster."[152] A policeman wanted to slap him, which ensued in a brawl. Authorities punished Kakub with fifteen blows using a whip. That he showed up at work on time the next day constituted proof for officials that their measures had straightened him out. Kakub ended up in the hospital for several weeks thereafter. Only that triggered a brief inquiry and evidence in the colonial records, while leaving the drilling crew short a worker.[153]

Settlers in need of water began to complain; they also increasingly started helping themselves. In 1911, an unnamed farmer noted, "The government is under the obligation to get water on those farms it had sold."[154] Another writer grumbled in the newspaper *Der Südwestbote* that "[o]wners have to pay property taxes and a cattle tax, have to move around with their cattle to here

and there and still have to pay for water and rangeland."[155] Making drilling equipment available for rent became one way to stretch funds. Yet that brought few results.[156] The local newspaper agreed with farmers' sentiment, calling it "a cry in distress."[157] Government officials, on the other hand, whined that it was mainly those who have made no effort whatsoever that ended up demanding government assistance.[158] Instead of waiting, some settlers also began taking matters into their own hands. Farmer Hans Lohse in Okahandja purchased his own drills.[159] Others called on dowsers to help. Farmer Kubisch later noted that von Uslar is "a most-respected person among farmers" in German Southwest Africa. Thanks to him, he added, dowsing is widespread and helpful for solving the water question.[160] Contemporary colonial publicist Clara Brockmann wrote in this context, "There are in the main two, in their way essentially different, means with which we have worked, namely the divining rod and discovery by scientific manner through geologists."[161] In her view, a simple farmer said it best when stating that his cattle does not care who discovered water.[162] Or take the experiences of Farmer Hellmuth Forkel from Holoog in the South. In May 1911, he sent a letter to Drilling Crew South asking for geographer Range, a drill expert, and "a man with knowledge regarding the dowsing rod" as soon as possible.[163] Forkel had been awaiting tree seedlings and grapevines, and those needed water as soon as possible. But delays piled up. For one, a windmill pump he had ordered sat in Lüderitzbucht for some time. Plus, the drilling crew ran behind schedule.[164] By September Forkel pleaded with officials—it did not help any.[165] Eventually, the drilling crew arrived in Nanibis, one of two farms Forkel owned in the Keetmanshoop region. After drilling for seventy meters without finding water he requested it to move on to nearby Holoog right away.[166] Although the drilling crew followed his request, Forkel remained unsatisfied: the hole was in his view no more than twenty meters deep. "I now have no advantage whatsoever based on this drilling hole especially because the drilling hole does not go into the hard rock but just sits loosely so that it brings up sand."[167] His threat to withhold payment might speak to the widely documented willingness of settlers to sue and complain. Walther Rathenau counted a stunning average of at least two lawsuits per settler in 1908.[168] Yet Forkel's experiences also showcase the issues farmers faced when trying to access water.

The imperial government also set up dam-building crews. Publications had long pointed to the potential of dams and irrigation. According to one local newspaper, "that is how the water question would be solved in the south."[169] Officials agreed. In 1911, mining assessor Hermann Nieß from District Rehoboth, for example, noted that dams would be essential.[170] By then farmer Hermann Brandt, the owner of a farm in Marienthal, had already built a dam to irrigate his farmland. It had a capacity of 52 million cubic yards (40 million cubic meters).[171] Settler Maria Karow had also described an array of efforts trying

to irrigate a garden, including the construction of a protective dam to prevent flooding.[172] Her brother-in-law, she added emphasizing the pioneering settler spirit, had also not shied away from toil or labor when he had constructed twelve dams meant to collect rainwater.[173] Overall, however, such constructs were few in number. Since they were generally built with little expertise, several failed, debacles that then only added to costs.[174] It did not help that few agreed on what constitutes the best structure. Farmer Ferdinand Gessert, an outspoken voice on all matters regarding irrigation, emphasized that smaller dams might do the trick. In his view, grain could sprout after the water evaporated.[175] Hydrology engineer Zwergern, on the other hand, pushed for trials with underground earth dams meant to contain the groundwater within the Swakop Riverbed.[176] For him, such *Grundsperren* (ground barriers) and *Grundschwellen* (ground dikes) would be the only way to elevate the groundwater level again.[177] The German parliament eventually agreed to financially support the construction of dams in 1907. By January 1908 the dam-building crew began its work.[178] Later coordinated with drilling crews, teams were supposed to plan irrigation schemes, evaluate existing proposals, and advise private entities.

Dam-building crews had no easy task. For one, the 1909/10 annual report did not earmark specific funds for them just yet.[179] One million Marks was eventually set aside in the 1911 budget.[180] The charity lottery was supposed to help out as well.[181] According to governmental statistics, all of that resulted in the construction of sixty-five dams by 1910. By 1912 funds ran dry.[182] One government publication tried to see the silver lining: "Nonetheless lots of farmers that see the value of such dam systems constructed dams with their means without government support."[183] On the ground, the situation was far from rosy. Take the example of farmer Otto Brinkman near the Langeberg mountain northwest of Otavi. He noted in personal correspondence from 1909 how "[w]ater dam structures here cost, if they should be useful, a grave amount of time, labor, and money; it takes years until a dam can be completed."[184] He had to delay planting because existing wells were simply not sufficient to sustain his crops. Vast distances were also a problem. It took until 1913 before a dam-building crew finally reached the south of the colony.[185] There were also issues with property rights. Rivers often demarked borders between different owners. However, the nature of ephemeral rivers and shifting riverbeds made that tricky,[186] issues not really addressed until early 1913.[187] Farmer David Maritz of Garis Farm near Kub eventually took matters into his own hands. In the view of several observers, his dam, which did well in early 1912, outlined the potential of such projects.[188]

Those most dependent on water had been looking into another way to make aridity work: dryland farming. "What is dryland farming?"[189] asked Arthur Golf, an agronomist researching colonial agriculture at Halle University. Ac-

cording to his definition, "Dryland farming means a [type of] agriculture in an arid region that is based on the conservation of moisture in the ground based on appropriate efforts regarding the soil before and during the growing season, and on the selection of such plant species and kinds that are particularly drought resistant."[190] Global connections had long defined discussions. Take South African agronomist William MacDonald, who had visited the 1909 Dry Farming Congress in Wyoming and influenced discussions in German Southwest Africa. In his view, "Dry-farming is destined to revolutionize the agricultural industry of South Africa as well as to solve the profound problem of the future, namely land settlement."[191] References to South Australia, North Africa, and the American Southwest were also widespread. One commentator noted in the magazine *Der Tropenpflanzer* that the "situation in Southwest Africa is rather similar [compared to the American Southwest], and I am very certain that we can learn from the development of the North American stepchild."[192] Farmers were mostly working with what contemporaries called the Campbell System. This approach basically relied on a packer for proper tillage of the ground as water was more or less "forced" into the soil.[193] Some also began toying with growing alfalfa and corn.[194] By 1911, at least Farmer Eickhoff had some good results with dryland farming on his farm in Omantangara;[195] Farmer Gessert's "great success" equally "proved that this protectorate could become a settler colony with a much larger capacity for immigrants than previously anticipated."[196] The colonial government itself completed trials at its experimental farm in Neudamm.[197] Yet by 1913 even the most outspoken advocates had to acknowledge that experiments were still "in the initial stages."[198]

Large-scale irrigation structures also saw a rebirth. Discussions about the ideas put forward by Rehbock and Kuhn had never fully gone away.[199] At least government building officer Rudolf Schmick's detailed report for such a project at the Naute had been calling for additional surveys into the region by 1907.[200] Two years later, one magazine stated, "The construction of large dams has increased in importance so rapidly in the German fatherland from year to year that it should primarily play an important role in the future of our African colonies";[201] that outlet also pointed to the Naute and Hatsamas, both locations Rehbock and Kuhn had explored much earlier. In 1907/8, a banking conglomerate had funded an expedition to examine existing proposals. Building officer Rudolf Schmick, a strong proponent of massive transformations of landscapes, was in charge. In one instance, Schmick outlined his vision "of superb vegetables such as artichokes, cucumbers, beans, tomatoes, additionally date palm trees, melons, strawberries and such, all in copious amounts" when describing successes with broader schemes in Bethanien.[202] A concise proposal for the construction of two dams along the Naute came out of the expedition.[203] Soon calling on the government to provide the required funding,[204] Schmick employed colonial frameworks of conquest when noting that

"pioneers willing to make sacrifices" should not have to deal with bureaucratic difficulties and limited funds.[205] Range's report submitted in October 1908 then concluded that "the geological conditions are generally favorable."[206] By the 1910s, Governor Seitz and the colonial administration in Windhoek had apparently realized that drilling and the construction of small dams would not generate enough water. Plus, some influential voices in Southwest Africa such as Gustav Voigts endorsed large-scale projects.[207] The budget for 1911 had still been "stingy" when it came to funding for the development of water sources.[208] Thanks to diamonds that began to change.[209] At least state secretary Wilhelm Solf gave good prospects "for the beginning of construction of a dam in the Löwenflussnaute."[210] Discussions around property rights, additional expeditions, and time for preliminary measurements followed.[211] In late 1913, a memorandum outlined the possibilities of using the water of the Fish River by constructing three dams.[212] A fifteen-page foldout from 1913 outlining the colonial government's vision for transforming the Fish River near Hatsamas certainly points to big ideas being hatched in Windhoek.[213] For some this was only the beginning. Soon afforestation and the eventual change of the overall climate would fundamentally transform the region. In early 1914 a first of three one-million Mark installments actually came through.[214] Efforts to complete the Avispforte dam, among others, had also moved forward by then.[215] A dam-building frenzy seemed to be on the horizon.

By 1914 the solution of the water question had progressed. Scholars estimate that crews "drilled between 50 and 100 boreholes per year and provided the basics of water supply to farmers, towns, and villages."[216] Much later Range spoke of sixty-three kilometers total when it came to drilling,[217] a number that is difficult to confirm. Farmer Carl Schlettwein, who contributed widely to debates regarding specifically the role of agriculture, noted in 1914 that "in almost all regions" water is accessible. In his view, experiences in reading "nature's sign" would easily provide the needed water.[218] The photographs he included in his publication showcase all kinds of structures—a successful transformation, it seemed. At the same time, and as one newspaper admitted in 1912, drilling efforts could "not keep up with the settlement of the country."[219] Besides, one commentator leaving the colony following World War I noted that farmers were still awaiting the arrival of long-promised drilling crews; he also criticized bad planning in regard to certain damming projects.[220] Regardless, there was a feeling of progress among settlers. Their publications spoke about a noticeable upswing in the development of the colony by 1908, even as problems remained.[221] By 1914 northern districts had an average of five dams, central districts an average of thirteen dams, and the southern districts an average seven dams.[222] Support for larger projects had increased as well. Irrigation schemes indeed took shape for settlements in Windhoek (Farm Voigtsland, Hoffnung, and Neudamm) and Mariental (Figure 7.4).[223] Whereas for Herero,

Figure 7.4. NAN 07607, "Storage dam on farm Hoffnung, 1900s," courtesy of the National Archives Windhoek.

Nama, and other African populations existing "sustainable economic patterns were replaced by dependencies deliberately brought by the colonial state,"[224] for a white settler minority the solution of the water question seemed within reach.[225]

Creating a Settler Paradise

The mood was good. It had been a sunny day in late May 1914 and the district administrator's meeting in Windhoek had just concluded. Discussions around self-government had been front and center. However, the water law, the role of afforestation, and the use of small dams also came up.[226] Now, it was time for the colony's first *Allgemeine Landesaustellung* (general state exhibition) to open its gates. An agricultural exhibit in 1913 had already displayed an array of products.[227] Yet his event seemed even more impressive. Fruits such as apricots, peaches, apples, and pears, as well as vegetables were on display together with all kinds of grains. The experimental station near Grootfontein received the first price for its large corn husks. John Ludwig, farming in Klein Windhoek since at least 1893, served his local wine. Others showed off their spirits and tobacco. A lot was going on at the stand of Robert Hummel who had beer.

Cattle wandered around while stands showcased leather and furs from Southwest Africa meant to conquer the world market. Even camels, now tamed by German experts like the land itself, performed by jumping over hurdles—"the high point," to follow one description.[228] Mining interests had a presence as well. There was copper, marble, and of course diamonds. The local building industry, together with countless machines for drilling, pumping, or irrigation, pointed to the development of the colony, all while a recently arrived plane circled over the fairgrounds. Elsewhere governmental statistics spoke of impressive growth when it came to the export of copper, diamonds, wools, furs, ostrich feathers, and more.[229] Later on, and in line with colonial narratives, farmer Gustav Voigts would speak of "the great success of this event." In his view all the work Germany had put into "a seemingly bleak and ignored land" had paid off.[230] Former Deputy Governor Hintrager added that the event met even the most courageous expectations.[231]

Cattle farming had certainly benefited from the availability of landing structures and railroads; it also now relied on expertise when it came to dealing with diseases. The *Rinderpest* pandemic had demonstrated the power of small pathogens and the wide dependency on animals for travel. Whereas the construction of the railway soon decreased such reliance along major travel routes, immunization had brought the pandemic under control. Of course different diseases, both threatening cattle and other livestock, still mattered. But veterinary infrastructure and a better understanding of diseases lowered dangers overall.[232] Cattle farming in particular became big business. Discussions surrounding the export of beef are a case in point. Thanks to easier access to world markets, cattle farmers increasingly thought about selling their beef in Germany, especially during the Meat Crisis. Soaring meat prices had been "less a problem of actual shortage than of meat becoming too expensive for the poor," as one scholar writes.[233] Regardless, the situation was socially explosive. By 1910 the German chancellor Theobald von Bethmann Hollweg opened the German market for imports. That move attracted interest among cattle farmers from around the globe. In the following years newspaper reported widely about the issue,[234] with some specifically pointing to the potential of feeding Germany with beef from Southwest Africa.[235] One expert from Berlin writing in the magazine *Kolonie und Heimat* acknowledged logistical issues and the comparatively poor quality of beef from that particular colony. It was just too chewy. Yet he also pointed to future possibilities when it came to feeding the metropole with surplus meat from the periphery. "Naturally and of course Southwest Africa will deliver meat to Germany," he concluded.[236] That France had been relying on her colonies only added fuel to such debates.[237] Cattle farmers in Southwest Africa certainly saw the opportunity. Georg Schmidtsdorf and Otto Külbel, a butcher and an entrepreneur, invested in a meat cannery opening in Karibib in 1913.[238] Problems with the quality of frozen beef leaving

Swakopmund, which persisted well into 1914, had made meat conservation a viable alternative.[239] Whereas German administrative hurdles meant to limit the spread of diseases brought additional delays, expanded investments and infrastructure increasingly allowed Southwest African cattle farmers to dream about markets well beyond the horizon.

Investments into logistics also invited additional experiments with other livestock. The larger-scale introduction of sheep, an idea originally floated by Adolf Lüderitz in 1885,[240] led Ernst Hermann to conduct trials as early as 1891. Subsidized by the government, he imported about 2,000–3,000 sheep from the Cape Colony. His efforts seemed promising. Then, in 1893, Hendrik Witbooi and his men stole 2,350 Merino sheep, 125 oxen, and 28 horses, all worth about 80,000 Marks.[241] Hermann tried again in Nomtsas—this time the formation of the Southwest African Sheep Farming Society helped.[242] After the 1904 Uprising such attempts finally moved forward. By 1906 one proposal already recommended the import of 20 million animals to produce 100 million kilograms of wool.[243] Two years later, and with an eye on potential exports, Colonial Secretary Dernburg called on farmers to more broadly replace their goats with sheep.[244] Hopes to break into the world market dominated by Australia and Argentina drove such propositions. Some even estimated that Southwest Africa could potentially contribute about half of the world's overall demand in wool.[245] Even just exporting to Germany, which had a net import of slightly over 200,000 tons of wool in 1912, made sense.[246] That year, an estimated 26,900 wool sheep lived in Southwest Africa altogether. Solving the water question, along with complaints about African labor, shaped discussions in the colony.[247] Colonial consultant and lawyer Wilhelm Külz, who had been involved in promoting the introduction of sheep early on, meanwhile began advertising Southwest African wool in Germany; Paul Rohrbach equally pointed to the future of this industry.[248] Subsequent efforts aimed at scaling up production by improving the organization of exports, refining the breeding process, and purchasing additional land. Next to the import of Angora and Merino sheep, Karakul sheep seemed particularly promising. Originating in central Asia, the slaughter of young lambs brought precious pelts commonly known as Karakul. In late September 1907, two bucks and ten ewes of Persian Karakul sheep landed in Swakopmund. Undersecretary and future governor Friedrich von Lindequist had bought them for 200 Marks each from Leipzig-based Paul Albert Thorer, a leading pelt businessman. Albert Voigts, who originally had little interest in these animals, took some of them, thus setting the basis for a successful industry later on.[249] Even Kaiser Wilhelm II invested in two farms in Southwest Africa.[250]

The development of ostrich farming followed similar trajectories. Feathers, cut in pens from cornered birds in a process that generally resulted in injuring these poor creatures, had long been a highly-sought after luxury fashion item,

especially among European and American upper-class women. As outlined by historian Sarah Abrevaya Stein, this was the time for elaborately trimmed hats decorated with plumage from not just ostriches but also hummingbirds, herons, bird of paradise, and other fowl.[251] By the 1880s such trends resulted in a craze for feathers. Inventory mainly came from Oudtshoorn in South Africa, the epicenter thanks to broad irrigation schemes, an arid climate, and other suitable factors.[252] By the 1910s prices went through the roof. According to one estimate, "nearly a million pounds of ostrich feathers, valued at roughly £2.6million, were exported from the Cape in 1912, yielding the largest gross income for ostrich feathers yet seen."[253] A highly lucrative if ultimately short-lived boom, voices in German Southwest Africa began wondering about how to get in on commercial ostrich breeding.[254] One debate focused on best breeding practices. While some saw wild ostriches as useful, others only wanted to rely on imported animals from South Africa—and shoot the rest.[255] Other discussions focused on demand, irrigation, and feed. The cultivation of alfalfa, talked about like a silver bullet for turning outwardly arid landscapes into productive spaces, was often seen as a viable solution.[256] The creation of an experimental farm for ostrich breeding at Otjituesu by 1911 underscored the role of government subsidies meant to promote overall efforts: colonial funds helped with the import of ostriches from South Africa and paid allocations for the construction of pens. Plus, German regulations prohibited the hunt of the flightless bird or the taking of their eggs. Meant to assist breeding efforts, such laws hurt African societies long relying on such practices to sustain themselves. Although repeated setbacks defined trials early on,[257] breeding efforts began showing promise, with some rounds of "cut-ready feathers" turning out well.[258]

Plant cultivation played a major role for livestock feed such as cattle, sheep, and ostriches; it also shaped agricultural schemes hoping to move beyond self-sufficiency. Farmers had long grown grain, vegetables, and fruits. Now, the increasing availability of transport and irrigation systems invited them to think about cash crops. Early experiments regarding the cultivation of cotton had resulted in promising evaluations of samples.[259] New sources of cotton had certainly been in high demand, with one commentator calling it "one of the most pressing questions of economic survival."[260] However, the lack of control over regions beyond the police zone, combined with a limited pool of labor and irrigation, delayed progress.[261] Soil and climate in Southwest Africa also made the cultivation of tobacco a possibility, a process that required experience when it came to proper curing.[262] Discussions exploring the potential farming of this product had long appeared in newspapers.[263] Early trials then took shape mainly in the District Okahandja, with the help of an experimental station by 1911.[264] Although experts on the ground painted a mixed picture, struggling with aridity, locusts, and difficulties in regard to curing, and al-

though actual trials rarely matched overall fantasies, government reports continually painted a "promising" picture.[265] Farmers Karl and Gustav Holtz from Osona were equally confident when noting in 1914, "Our experiences and beautiful successes in the cultivation of tobacco in a relatively short amount of time entitle us to speak of tobacco in Southwest as an economic opportunity with a great future."[266]

The employment of experimental stations as environmental infrastructure in its own right also defined efforts regarding afforestation. The planting of trees as a way to combat aridity, raise the water level, and influence the climate had popped up for some time.[267] With little awareness of, or concern for, underlying indigenous understandings or long-term climatic cycles, German newcomers generally felt confident that their ingenuity could reverse supposed destructions and desiccation. By 1913 at least one farmer claimed that "human skill can restore a previous situation" and prevent the loss of water.[268] Others took it a step further. As outlined by historian Harri Siiskonen, "Wild visions were raised: Mr Schramm, a forester of the town of Rostock in Germany, suggested the creation of artificial swamps in the valleys of the Central Highland, allowing the green zone to be extended to the slopes of the mountains."[269] Farmer Ferdinand Gessert pushed for "redirecting" the Kunene River altogether.[270] A certain Mr. H. Schweichel of Berlin clearly had an even more far-fetched idea. As proposed in two letters he sent to governor von Lindequist in 1907, colonialists should transform the Namib Desert and the Central Highland by creating "green zones" every couple of kilometers.[271] The fact that this proposal was even entertained prior to being rejected by Chief Forestry Officer Hartmut Pogge highlights a certain belief in such possibilities.[272] That there was also a lack of wood only invited such thinking.[273] Forestry stations had already popped up at the turn of the century.[274] With plans for Okahandja disrupted due to the war,[275] and some setbacks due to incompetence that even the colonial government acknowledged,[276] efforts soon became much more systematic. Experts experimented with nonnative and native plants such as *Eucalyptus, Casuarina,* and *Acacia*;[277] by 1910, there were also ten forest stations or nurseries in operation. According to estimates, in 1913 the station at Grootfontein alone sold 30,000 vines and Windhoek sold 12,208 wood-lot trees.[278] Trials expanded thereafter, soon including maize, millet, mustard, all kinds of fruit trees, as well as an array of other plants.[279] Agroforestry methods, employed to reduce costs for farmers, played an important role in a world defined by afforestation, intercropping, and irrigation.[280] Although many of these trials failed or yielded much less than anticipated,[281] proponents remained confident in the power of trees.[282]

Overall then, by the 1910s the colony seemed to be on an upswing. More German settlers had arrived. In 1898, there were 1,242 German males living in Southwest Africa. Four years later that number had reached 2,595. It dou-

bled by 1908 to 6,215 (males and females), reaching 9,288 in 1909 and more than 12,000 in 1913.[283] Although German immigration still fell well short of those leaving for the United States, locations such as Windhoek, Okahandja, Gibeon, and Keetmanshoop became settler hubs. "Progress in settlement," to follow one commentator, became increasingly visible.[284] By 1909, agricultural scientist and colonial enthusiast Ferdinand Wohltmann had already noted a "tangible turnaround";[285] two years later he wrote about the largest upswing in all of Germany's colonies.[286] In 1912 exports overtook imports for the first time.[287] A year later Wohltmann wrote, "The early stages of agricultural development within our colonies are behind us!"[288] By early 1907, 480 farms had been sold; by 1913, farm sales had risen to 1,331.[289] Estimates note that in 1891/92 around 135 hectares of land were in use for agriculture; by 1912, the last year with sufficient data before World War I, it was more than 6,000 hectares. This shift also meant an increase in irrigation since most cultivations required water.[290] Of course, and according to one scholar, "German state control resembled more 'islands of rule' than a net, and, until the end, its power remained arterial rather than capillary."[291] Still, newcomers could rely on landing structures, railways, irrigation systems. Most notably, they had access to a permanent black proletariat. Whereas such workers had found ways to navigate these structures, German farmers repeatedly mistreated them. Take Ludwig Cramer at his farm in Otjisororindi. Presumably threatened by Herero workers, he lashed out, brutally punishing seven of them. Two women died. Initially sentenced to twenty months in jail, the punishment was later lessened—and his wife got to tell the story of their own suffering.[292] In that sense, and apart from land, labor, experimental stations, and other subsidies, settlers could take advantage of broader discriminatory policies. Whereas that did not necessarily guarantee success, newcomers generally saw a way forward. For them, the colony was finally on the right track as "old Africa" had died through investments, technology, and progress.[293] Or, to quote one contemporary writing in 1913, "German Southwest Africa is a civilized land!"[294]

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The period following the war saw the expansion of environmental infrastructure meant to help turn a conquered land into a white settler paradise. According to the *Windhuker Nachrichten* newspaper in 1905, settlers had dealt with all kinds of issues: "Torrential rains have filled valleys and rivers here as well and washed away dams and gardens—but we did not grumble; hail, frost, drought, and locusts have resided on fields, gardens and grazeland—yet we did not grumble. Rinderpest, horse sickness, and other pandemics have devastated our herds," it continued, closing by noting that politicians would be at fault if after the conclusion of the Uprising all had been for nothing.[295] And so investments into landing structures, railways and irrigation began pour-

Figure 7.5. NAN 09490, "Swimming in dam, Heusis, ca. 1912," courtesy of the National Archives Windhoek.

ing in. Work began on a metal replacement for the failing wooden landing structure; crews helped with irrigation schemes; experimental stations provided resources and advice. Largely sustained thanks to the exploitation of diamond fields and African labor, settlers could now come into the colony to find living space. Similar to other colonial settler spaces, the subsequent commodification of lands began changing the face of agriculture. The introduction of large-scale commercial farming enterprises, for one, resulted in subsequent land alienation.[296] In Southwest Africa, towns, settlements, and homesteads, connected by railways and sustained by wells and dams, popped up throughout a supposedly empty land. Such commodification, as Emmanuel Kreike writes, "and the imposition of colonial power also led to the colonial state's channeling of African rural labour from pastoralism and crop cultivation into the colonial economy through forced labour, forced cultivation, and migrant labour."[297] It is in this context that Southwest African deserts seemingly turned into a white settler paradise, uncultivated land into productive spaces for the privileged few, as dreams of a German living space began becoming a reality.

Colonial storylines of conquest framed such experiences. Contemporaries wrote about arid frontier spaces and their pioneering spirits as they toiled to create these islands of *Heimat* abroad. Former colonial soldiers turned farmers relied on "sword and plow," to follow contemporary Kurd Schwabe.[298] Margarethe von Eckenbrecher and her husband "fought, worked and suffered for the

Southwest" at their farm in Okombahe.[299] These struggles against nature at the frontier became part of a *Südwest* identity. In 1911, the *Kolonie und Heimat* magazine published a coffee table book outlining that character. Filled with 212 photographs and claiming to bring some objective knowledge to ongoing discussions about the colony, it basically portrayed Germanization in Southwest Africa.[300] Farms, situated within harsh but managed landscapes, are at the center. Comparable to missionary hubs, sceneries showcase homesteads framed by a handful of trees and lots of greenery. A set of four photographs titled "Irrigation Systems" specifically includes dams, small lakes, and drilling efforts; other photographs capture cattle, sheep, horses, and ostriches. Germans with their "fighting spirit" had conquered harsh landscapes, to follow another contemporary.[301] Settler Clara Brockmann noted how they had followed their "duty," returned to a romanticized nature juxtaposed against the "modern human."[302] Now they posed in photographs in front of their prized possessions as lords at the frontier (Figure 7.5). Africans, at best a backdrop, showed up only as laborers processing tobacco plants, working in mines, or herding cattle. The emerging *Südwest* identity, a sense of a white self intricately wedded with colonial narratives and shaped by a larger struggle against nature, thus included the destruction of those non-whites long making a living in this land. The hymn of Southwest Africa, at times sung for the Kaiser's annual birthday celebration in January, fits into that. It speaks of a soil soaked "with the blood of German heroes," a baptism, it seems, as men "from the German race" and "true German women" build their new "homeland."[303] As demonstrated by historian Lora Wildenthal, the "myth of the *Farmersfrau* (colonial woman farmer)," sustained by publications and overall efforts namely in the magazine *Kolonie und Heimat*, played an important role within a context grounded in agrarian nostalgia.[304] For contemporaries, such colonial narratives held even without Social Darwinist undertones. For them, subsidies and benefits, African labor and open lands in need of transformation, all of that seemed normal, natural, and in the great scheme of things even inevitable. Who else would improve on the land as settlers had? Who else would make this a cultivated space? And so, in the end, the image of a farm on the frontier—a German farmer toiling to get water to his cows while his wife tries to cultivate a garden—took over, a narrative structure that would haunt Southwest Africa well beyond colonial rule.[305]

Notes

1. Grimm, *Afrikafahrt West*, 98.
2. *Kolonie und Heimat* IV, no. 2, "Lüderitzbucht und seine Diamatenfelder," 1910 (Rohrbach). See also Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 113.
3. Press, *Blood and Diamonds*, 57.

4. Ibid., 58. See also Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 128; Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 392–99; Ulrike Lindner, "Transnational Movements between Colonial Empires: Migrant Workers from the British Cape Colony in the German Diamond Town of Lüderitzbucht," *European Review of History* 16, no. 5 (2009): 679–95, here 682.
5. *Kolonie und Heimat* IV, no. 2, "Lüderitzbucht und seine Diamatenfelder," 1910 (Rohrbach).
6. Press, *Blood and Diamonds*, 57–58. Popular discussions often note that he received nothing. See Olga Levinson, *Diamanten im Sand: Das wechselvolle Leben des August Stauch* (Windhoek, 2007); Zora del Buono, "Lüderitz in Namibia: Deutsche Geister in Südwest," *Der Spiegel*, 13 January 2011.
7. Henkel, *Der Kampf um Südwestafrika*, xii.
8. *Kolonie und Heimat* II, no 12, "Das neue Diamanten-Land. Deutsch-Südwest im Jahre 1907/08," 28 February 1909. See also *Der Tropenpflanzer* XII, no. 8 and 10. The scholarship tends to see 1907/8 as a turning point. See Gründer, *Geschichte der deutschen Kolonien*, 283.
9. Paul Leutwein, *Du weitest deine Brust, der Blick wird freier: Kriegs- und Wanderfahrten in Südwest* (Berlin, 1909), 14, quoted in Kundrus, *Moderne Imperialisten*, 147. See also Henkel, *Der Kampf um Südwestafrika*, xii.
10. Olusoga and Erichsen, *The Kaiser's Holocaust,* 235. See also Zimmerer, *Deutsche Herrschaft über Afrikaner*, 57–68.
11. Ernst Freimut, *Gedanken am Wege: Reiseplaudereien aus Deutsch-Südwestafrika* (Berlin, 1909), 207, as quoted in Kundrus, *Moderne Imperialisten*, 141. See also Paul Rohrbach, *Aus Südwest-Afrikas schweren Tagen* (Berlin, 1909), 54, as referenced in Steinbach, "Carved out Nature," 47.
12. *Lüderitzer Zeitung*, 25 November 1911, no. 47 and *Südwestbote* (Windhoek), 25 December 1912, no. 154/155, as referenced in "Carved out Nature," 67. See also Rathenau, *Industrialist, Banker, Intellectual, and Politician*, 92.
13. Henkel, *Der Kampf um Südwestafrika*, 1908, xiii.
14. *Kolonie und Heimat*, "Deutsch Südwestafrika," 15 March 1908.
15. Zimmerer, *Deutsche Herrschaft über Afrikaner*; Muschalek, *Violence as Usual*.
16. *Jahresbericht über die Entwicklung der Schutzgebiete in Afrika und der Südsee im Jahre 1906/07, Teil E.: Deutsch-Südwestafrika* (Berlin, 1908), 19. See also Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 59–60.
17. v. König, "Deutsche Kolonialschule," in *Deutsches Kolonial-Lexikon*, Band III, 723.
18. Wildenthal, *German Women for Empire*, 166.
19. *Der Tropenpflanzer* XVII, no. 7, "Aus deutschen Kolonien. Der landwirtschaftliche Dienst und das landwirtschaftliche Versuchswesen in den deutschen Schutzgebieten," July 1913.
20. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet. Regen," 8 January 1902. See also *Deutsche Kolonialzeitung*, "Deutsch-Südwestafrika: Regen und Wasserbeschaffung," 30 April 1903; Semler, *Meine Beobachtungen in Süd-West-Afrika*, 44–45; Hintrager, *Südwestafrika in der deutschen Zeit*, 141; Bley, *South-West Africa under German Rule*, 205.
21. Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 437. See also Lehmann, "Waterberg to Sandveld," 542–43.

22. *Der Tropenpflanzer* XVII, no. 1, "Neujahrsgedanken 1913," January 1913.
23. Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 37. Settlers spent little time thinking about, or even acknowledging, precolonial efforts tied to the cultivation of some of these plants, including tobacco.
24. *Der Tropenpflanzer* XVII, no. 7, "Aus deutschen Kolonien: Der landwirtschaftliche Dienst und das landwirtschaftliche Versuchswesen in den deutschen Schutzgebieten," July 1913.
25. Helene von Falkenhausen supervised such efforts. *Deutsche Kolonialzeitung*, "Die Lehrfarm Brakwater in Südwestafrika für junge Mädchen," 12 March 1910; *Deutsche Kolonialzeitung*, "Die Lehrfarm für gebildete junge Mädchen in Brakwater bei Windhuk," 8 July 1910.
26. *Der Tropenpflanzer* XVII, no. 7, "Aus deutschen Kolonien: Der landwirtschaftliche Dienst und das landwirtschaftliche Versuchswesen in den deutschen Schutzgebieten," July 1913; *Der Tropenpflanzer* II, no. 11, "Die landwirtschaftliche Station Spitzkoppjes in Südwestafrika," November 1898; Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche Jahresberichte* (Berlin, 1913), 121. See also Lau and Reiner, 100 *Years of Agricultural Development in Colonial Namibia*, 15.
27. *Deutsch-Südwestafrika: Amtlicher Ratgeber für Auswanderer* (Berlin, 1907).
28. BArch-B, R 1001/1199–1202, Landerwerbungen und Aufgebote von Landansprüchen; BArch-B, R 1002/2610, Farmangelegenheiten. See also Kundrus, *Moderne Imperialisten*, 64.
29. *National-Zeitung*, 25 December 1906, as referenced in Laak, *Imperiale Infrastruktur*, 129.
30. *Deutsche Kolonialzeitung*, "Koloniales Preisausschreiben," 12 January 1907; *Koloniale Zeitschrift*, "Wie machen wir unsere Kolonien rentabel?" 12 September 1907. See also Bley, *South-West Africa under German Rule*, 107.
31. Max Esser, *An der Westküste Afrikas: Wirtschaftliche und Jagd-Streifzüge* (Berlin, 1898), 191. See also Gümpell, *Die Wahrheit über Deutsch-Südwest-Afrika*, 18.
32. Otto, *Südwest-Afrika,* 34. See also *Der Südwestbote*, "Aussichten des Bergbaues in Deutsch-Südwest," 7 March 1907; *Der Tropenpflanzer*, "Auszüge und Mitteilungen: Zinnfunde in Deutsch-Südwestafrika," 9 September 1907; *Kolonie und Heimat*, "Die Bodenschätze von Deutsch-Südwestafrika," 13 September 1908 (Kuntz).
33. J. Kuntz, "Bergbau," 200–24, in *Taschenbuch für Südwestafrik*a, ed. Philalethes Kuhn and Kurd Schwabe (Berlin, 1909); Albrecht Macco, *Die Aussichten des Bergbaues in Deutsch-Südwestafrika* (Berlin, 1907).
34. Kuntz, "Bergbau," 224, in Philalethes and Schwabe, *Taschenbuch für Südwestafrika.*
35. Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1910/11: Amtliche Jahresberichte* (Berlin, 1912), 130–31; Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche Jahresberichte* (Berlin, 1913), 130–31.
36. Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche Jahresberichte* (Berlin, 1913), 131. Copper had been mined long before the Germans arrived. See John Kinahan and J. C. Vogel, "Recent Copper-Working Sites in the !Khuiseb Drainage, Namibia," *The South African Archaeological Bulletin* 37, no. 135 (June, 1982): 44–45; Brigitte Lau, ed., *The Matchless Copper Mine in 1857* (Windhoek, 1987).

37. Conradt, *Erinnerungen aus zwanzigjährigem Händler- und Framerleben in Deutsch-Südwestafrika,* 69–70.
38. *Zeitung des Vereins Deutscher Eisenbahn-Verwaltungen*, "Eisenbahnpläne in Südwestafrika," XLI, no. 44, 8 June 1901; *Deutsch-Südwestafrikanische Zeitung,* "Die Otavibahn," 9 October 1902; Dix, *Afrikanische Verkehrspolitik*, 52; Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 14. See also [n.a.], "Die Otavi-Bahn und die Otavi-Minen," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VII, no 11 (Oct. 1905); *Kolonie und Heimat* II, no. 13, "Der Kupferbergbau in Deutsch-Südwest," 14 March 1909 (du Bois).
39. Kuntz, "Bergbau," 208, in Philalethes and Schwabe, *Taschenbuch für Südwestafrika.*
40. Lindner, "Transnational Movements between Colonial Empires," 679. See also Külz, *Deutsch-Südafrika im 25. Jahre deutscher Schutzherrschaft*, 48.
41. Lindner, "Transnational Movements between Colonial Empires," 684.
42. Laak, *Imperiale Infrastrukturen*, 184.
43. Schmidt-Lauber, *Die abhängigen Herren*.
44. Paul Rohrbach, *Die Kolonie* (Frankfurt am Main, 1907); Paul Rohrbach, *Deutsche Kolonialwirtschaft: Kulturpolitische Grundsätze für die Rassen- und Missionsfragen* (Berlin-Schöneberg, 1909); Paul Rohrbach, "Deutsche Welt- und Kolonialpolitik," in *Preußische Jahrbücher* 152 (1913), ed. Hans Delbrück, 509–25 (Berlin, 1913).
45. Paul Rohrbach, *Deutsch Südwest-Afrika ein Ansiedlungs-Gebiet?* (Berlin-Schöneberg, 1905), 26–27 and 81. See also Kundrus, *Moderne Imperialisten*, 63; Wildenthal, *German Women for Empire*, 97.
46. Rohrbach, *Deutsche Kolonialwirtschaft*, 305. See also Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 45.
47. Rohrbach, *Ansiedlungs-Gebiet*, 24, as quoted in Kundrus, *Moderne Imperialisten*, 71. See also Olusoga and Erichsen, *The Kaiser's Holocaust,* 237; Laak, *Imperiale Infrastruktur*, 187.
48. Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika,* 40; Joachim Pfeil, *Deutsch-Südwest-Afrika, jetzt und später* (Munich, 1905), 11; Wolf, *Deutsch-Südwestafrika*. See also Steinmetz, *The Devil's Handwriting*, 182.
49. Kurd Schwabe, *Deutsch-Südwestafrika: historisch-geographische, militärische und wirtschaftliche Studie, Vortrag gehalten in der Militärischen Gesellschaft zu Berlin am 15. März 1905* (Berlin, 1905), 5/6 and 11.
50. Ibid., 20.
51. Ibid., 21.
52. Otto, *Südwest-Afrika,* 27–28.
53. *Windhuker Nachrichten*, "Ist Deutsch-Südwestafrika ein Bauernland?" 22 August and 29 August 1908 (Bonn). See also Olusoga and Erichsen, *The Kaiser's Holocaust*, 236.
54. *Kolonie und Heimat* I, no. 26, "Diamanten aus Lüderitzbucht," 13 September 1908 (B.S.).
55. *Koloniale Rundschau*, "Negerarbeit in Afrika," 1909, 65–75, here 71. See also Rizzo, *Photography and History in Colonial Southern Africa*, 22; Zimmerer, *Deutsche Herrschaft über Afrikaner*, 176. See also Muschalek, "Violence as Usual," 130.
56. Lyon, "From Labour Elites to Garveyites," 54.
57. Hans Dominik, *Vom Atlantik zum Tschadsee: Kriegs- und Forschungserfahrungen in Kamerun* (Bremen, 1908), 13.

58. Zimmerer, "War, Concentration Camps and Genocide in South-West Africa," in Zimmerer and Zeller, *Genocide in German South-West Africa,* 29.
59. *Deutsche Kolonialzeitung*, "Arbeiternot und Eingeborenenpflege in Südwestafrika," 29 April 1911. See also Steinmetz, *The Devil's Handwriting*, 171; Zimmerer, "War, Concentration Camps and Genocide in South-West Africa," 30–35; Zimmerer, *Deutsche Herrschaft über Afrikaner*, 68–94.
60. Zimmerer, *Deutsche Herrschaft über Afrikaner*, 191. See also Prein, "Guns and Top Hats."
61. 1908/09, 1909/10 and 1911/12 provided more sustainable rains compared to 1910/11 and 1912/13. See Prein, "Guns and Top Hats," 106.
62. *Deutsch-Südwestafrikanische Zeitung*, 4 March 1908, as quote in Prein, "Guns and Top Hats," 104.
63. Ibid., 105.
64. Jimmy La Guma, *A Biography by Alex La Guma*, ed. Mohamed Adhikari (Cape Town, 1997), 18–19. See also Press, *Blood and Diamonds,* 115.
65. Lindner, "Transnational Movements between Colonial Empires," 687. See also Zimmerer, *Deutsche Herrschaft über Afrikaner*, 211–42; Press, *Blood and Diamonds*, 115.
66. Press, *Blood and Diamonds*,117.
67. *Deutsch-Südwestafrikanische Zeitung*, "Hungersnot im Ovamboland," 2 December 1908; *Südwest*, "Hungersnot im Ambolande in Sicht," 14 April 1911; *Deutsche Kolonialzeitung*, "Rundschau: Nach der Dürre Ueberschwemmungen," 8 May 1909.
68. Press, *Blood and Diamonds*, 117.
69. Otto Hammann, *Um den Kaiser* (Berlin, 1919), 13. See also Sören Utermark, "'Schwarzer Untertan versus schwarzer Bruder': Bernhard Dernburg in den Kolonien Deutsch-Ostafrika, Deutsch-Südwestafrika Togo und Kamerun" (PhD diss., University of Kassel, 2011).
70. Utermark, "'Schwarzer Untertan versus schwarzer Bruder,'" 129–30; Ulrich van der Heyden, "The 'Hottentot Elections' of 1907," 113–19, here 115, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
71. BArch-B, R 1001/ 1461, Informationsreise des Staatssekretärs Bernhard Dernburg nach Deutsch-Südwestafrika und nach Britisch-Südafrika (1908); BArch-B, R 1001//1493, Empfehlungen fur Forschungsreisende, Jan. 1907–Juni 1910, "Expeditionsüberblick"; BArch-K, N 1130/48, Nachlass Dernburg, Reiseplan; *Windhuker Nachrichten*, "Staatssekretär Dernburg über Deutsch-Südwestafrika," 27 February 1909.
72. BA Koblenz, RKolA, Personalakte Dernburg, 2/5, iv, Dernburg to the Duke of Mecklenburg (President of the Colonial Society), 4 May 1908, as quoted in Rathenau, *Industrialist, Banker, Intellectual, and Politician,* 60. Rathenau was rather critical when it came to the recent war and subsequent investments.
73. Laak called it a "new economic spirit." Laak, *Imperiale Infrastruktur*, 134. See also Press, *Blood and Diamonds*.
74. Bernhard Dernburg, *Zielpunkte des Deutschen Kolonialwesens. Zwei Vorträge* (Berlin, 1907), 5. See also Laak, *Imperiale Infrastruktur*, 137–38.
75. Utermark, "'Schwarzer Untertan versus schwarzer Bruder,'" 150–55.
76. *Kolonie und Heimat* II, no. 7, "Swakopmund. Bilder aus der Haupthafenstadt von Deutsch-Südwest," 20 December 1908. See also *Kolonie und Heimat* III, no. 26, "Swakopmund: Der Haupthafenplatz von Deutsch-Südwest," 11 September 1910.

77. Otto, *Südwest-Afrika,* 4.
78. *Kolonie und Heimat*, "Wieder in Südwest. Reisebriefe unsres nach den westafrikanischen Kolonien entsandten Berichterstatters," 12 April 1908 (Berthold).
79. *Deutsche Bauzeitung* XLI, no. 96, "Das Bauwesen im Deutschen Reichshaushalt 1908 (Schluss)," 30 November 1907, 674–77, here 676–77.
80. *Deutsche Kolonialzeitung*, "Dernburgs Studienreise nach Britisch- und Deutsch-Südwestafrika!" Sonderbeilage zur Nr. 39, 26 September 1908. See also Külz, *Deutsch-Südafrika im 25. Jahre Deutscher Schutzherrschaft*, 49.
81. *Deutsche Kolonialzeitung,* "Dernburgs Studienreise durch Britisch- und Deutsch Südwestafrika!" 12 September 1908.
82. *Deutsch-Südwestafrikanische Zeitung,* "Reichstags-Verhandlungen über den Molenarm," 3 July 1909; *Windhuker Nachrichten*, "Ueber die Möglichkeit eines brauchbaren Hafens in Swakopmund," 1 September 1909.
83. Paul Rohrbach, "Eisenbahn- und Hafenfragen in unseren westafrikanischen Kolonien," *Marine-Rundschau* 18 (October 1907), 1115–38, here 1136. See also *Kolonie und Heimat*, "Landungsverhältnisse in Deutsch-Südwest-Afrika," 8 December 1907 (Dix); Rohrbach, "Eisenbahn- und Hafenfragen in unseren westafrikanischen Kolonien," 1135–36; Connemann, "Meinungsaustausch," *Marine-Rundschau* (June and October 1908); A. v. Horn, "Hafenanlage in Swakopmund," XXXVII, no. 11 (November 1909), 508–12; Conneman, "Hafenanlage in Swakopmund," *Annalen für Hydrographie und maritimen Meteorologie* XXXVIII, no. 6 and no. 12 (June and December 1910).
84. *Der Südwestbote*, "Schutzgebiets-Chronik. Eine neue Landungsbrücke für Swakopmund," 11 January 1911.
85. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund: Vom Brückenbau," 3 October 1911. See also *Deutsch-Südwestafrikanische Zeitung,* "Aus Swakopmund: Vom Brückenbau," 15 December 1911; *Deutsch-Südwestafrikanische Zeitung,* "Die neue Landungsbrücke," 24 April 1913.
86. *Deutsch-Südwestafrikanische Zeitung,* "Braucht Swakopmund eine Eingeborenen-Werft?" 23 March 1911. *Deutsch-Südwestafrikanische Zeitung,* "Eingeborenenwerft für Swakopmund," 28 February 1914; *Südwest*, "Extratouren beim Brückenbau," 11 March 1913; *Deutsch-Südwestafrikanische Zeitung,* "Swakopmunder Traum," 21 June 1913.
87. Hermann Schwabe, "Die Landungsanlagen in Swakopmund," *Deutsche Bauzeitung* XLIV, no. 34 (27 April 1910), 255–56, here 256.
88. *Der Südwestbote*, "Schlepper *Windhuk* gesunken," 25 and 29 July 1911; *Deutsch-Südwestafrikanische Zeitung*, "Schweres Unglück auf der Swakopmunder Reede," 25 July 1911.
89. BArch R 1001/ 1868, Seeunfälle (*Eduard Bohlen*, Untergang des Schleppers *Windhuk*, and Seeamt Hamburg).
90. *Deutsch-Südwestafrikanische Zeitung,* "Swakopmund: Pferde in der Brandung," 16 February 1912. See also *Deutsch-Südwestafrikanische Zeitung,* "Die alte Mole," 1 April 1913.
91. NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Eisenbahnbattalion, letter 27 March 1907. See also NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Untersuchung, letter, 10 June 1907.
92. NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Eisenbahnbattalion, letter 27 March 1907; NAN,

ZBU, 1884–1915, 1762 T.VII.G I (Vol 3) Hafen von Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1912–13), report, April 1913.

93. See NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Kaiserliches Hafenamt, letter, 22 June 1907. See also *Windhuker Nachrichten*, "Die Landungsanlagen in Lüderitzbucht," 17 October 1907.
94. *Kolonie und Heimat*, "Lüderitzbucht: Reisebrief unsres nach den westafrikanischen Kolonien entsandten Berichterstattern," 9 May 1908 (Berthold).
95. See NAN, ZBU, 1884–1915 (Vol. 1), 1762 T.VII.G I (Vol 3) Hafen von Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1912–13), letter, 20 July 1912; Ibid., (Vol 5) Hafen von Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1914–15), letter, 28 March 28 1914.
96. *Deutsch-Südwestafrikanische Zeitung,* "Aus dem Schutzgebiet: Lüderitzbucht," 28 September 1911.
97. NAN, ZBU, 1884–1915 (Vol. 1), 1762 T.VII.G I (Vol 4) Hafen von Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1913–14), letter, 25 July 1913.
98. Cornell, *Glamour*, as quoted in Press, *Blood and Diamonds*, 61.
99. *Deutsch-Südwestafrikanische Zeitung*, "Diamantenfund," 24 June 1908, as quoted in Press, *Blood and Diamonds*, 65.
100. Press, *Blood and Diamonds*, 69.
101. Ibid., 71–72 and 76.
102. Jones, "On Desolate Sands," 96.
103. Hull, *Absolute Destruction*, 79. See also Zeller, "Wie Vieh wurden hunderte zu Tode getrieben und wie Vieh begraben," 227; Jones, "On Desolate Sands," 96; Harris et al., "Monuments in the Desert," 127.
104. Jones, "On Desolate Sands," 96, in *Sea Ports and Sea Power.* See also Kludas, *Die Schiffe der deutschen Afrika-Linien 1880–1945*, 20.
105. Harris et al., "Monuments in the Desert," 112.
106. Ibid., 114.
107. *Simplicissimus: Illustrierte Wochenschrift*, "Karneval 1908," 22 February 1908 (Spezial-Nummer, Karneval).
108. Hintrager, *Südwestafrika in der deutschen Zeit*, 140. See also Lisa Kuntze, "Die große Zeit der Diamantenfunden," 449–60, here 454, in Becker and Hecker, *1884–1984*; Clara Brockmann, *Briefe eines deutschen Mädchens aus Südwest* (Berlin, 1910), 28.
109. Press, *Blood and Diamonds*, 121.
110. Ibid., 120–22.
111. Zimmerer, *Deutsche Herrschaft über Afrikaner*, 220.
112. Press, *Blood and Diamonds*, 123. The chapter "Underworld" includes numerous examples.
113. Ibid., 172.
114. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 176. According to Press, by 1912 it was 75 percent of the Southwest's budget. See Press, *Blood and Diamonds*, 200. Scholars long pointed to 52 million between 1908 and 1913. See Olusoga and Erichsen, *The Kaiser's Holocaust*, 241; Klaus Dierks, *Chronology of Namibian History: From Pre-Historical Times to Independent Namibia* (Windhoek, 2002), 138; Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 399.

115. Press speaks about 118 million Marks for 1913 alone. Press, *Blood and Diamonds*, 89.
116. Lindner, "Transnational Movements between Colonial Empires," 683.
117. Laak, *Imperiale Infrastrukturen*, 138. See also Paul Rohrbach, "Die Eisenbahnen Afrikas," *Preußische Jahrbücher* 128 (1907), 514–29; *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* XLIX, no. 96, "Die neue Kolonialbahnvorlage an den deutschen Reichstag," 8 December 1909; *Kolonie und Heimat*, III, no. 8, "Das südwestafrikanische Eisenbahnnetz," 2 January 1910; Dix, *Afrikanische Verkehrspolitik*, 60–75; Bruno Felix Hänsch, "Zur deutschen Kolonialbahnfrage in Afrika," *Geographische Zeitschrift* XIII (1907), 601–14.
118. BArch-K, N 1037/8, Nachlass Hintrager, Eisenbahn-Programm.
119. *Deutsch-Südwestafrikanische Zeitung*, "Eisenbahnen in Südwestafrika," 22 February 1905. See also *Südwest*, "Vom Stand des Bahnbaues," 20 December 1910; *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* XLIX, no. 24 "Einführung einheitlicher Umgrenzungslinien des lichten Raumes und der Fahrzeuge fur Eisenbahnen von Meter- und Kapspurweite in den deutschen Schutzgebieten," 24 March 1909 (Baltzer); Baltzer, *Die Kolonialbahnen*, 81; Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 37.
120. *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Umbau der Okahandja-Brücke," 15 January 1912.
121. Deutsches Historisches Museum, ed., *Deutscher Kolonialismus: Fragmente seiner Geschichte und Gegenwart*, 2nd ed. (Darmstadt: Theiss, 2017), 258–59. For the photo, see *Kolonie und Heimat* II, no. 1, "Zur Eröffnung der Eisenbahn Lüderitzbucht–Keetmanshoop," 1 October 1908.
122. *Deutsch-Südwestafrikanische Zeitung,* "Aus dem Schutzgebiet," 6 March 1909.
123. *Der Südwestbote*, "Ein schweres Eisenbahnunglück," 14 January 1912. See also *Der Südwestbote*, "Schutzgebiets-Chronik: Verkehrsstörung," 12 January 1912; *Deutsch-Südwestafrikanische Zeitung,* "Das Eisenbahnunglück bei Johann-Albrechtshöhe," 16 January 1912; *Südwest*, "Das Eisenbahnunglück," 12 January 1912; *Amtsblatt für das Schutzgebiet Deutsch-Südwestafrika,* "Bekanntmachung. Zugverkehr in der Regenzeit," 1 February 1912.
124. NAN, EVE 140 C.3.A. (Vol 3) Betriebsunfälle 1903–07; NAN, EVE 140 C.3.A. (Vol 4) Betriebsunfälle Entgleisung 07–09; NAN, EVE 140 C.3.A. (Vol 5) Betriebsstörungen und Unfälle Allgemeines 1909–14. See also *Der Südwestbote*, "Ein schweres Eisenbahnunglück," 14 January 1912.
125. *Deutsch-Südwestafrikanische Zeitung,* "Vom Hochwasser," 5 March 1912.
126. That applied to track maintenance along the OMEG Line when only the track inspector, supervisors, and foremen were white. Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 140.
127. Ibid., 153–57. See also *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* LII, no 95, "Der Eisenbahnbau in den afrikanischen Schutzgebieten Deutschlands während des Jahres 1912 und sein gegenwärtiger Stand," 7 December 1912; *Deutsch-Südwestafrikanische Zeitung,* "Eisenbahnbedenken," 12 May 1909; *Der Südwestbote*, "Ein hoffungsvoller Ausblick," 21 December 1913; *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* LIII, no 92*,* "Südwestafrikanische Verkehrsfragen vor dem Landesrat in Windhuk," 26 November 1913.
128. Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 153.
129. La Guma, *A Biography by Alex La Guma*, 19. It is not clear where exactly he worked.

130. Zimmerer, *Deutsche Herrschaft über Afrikaner*, 230–36.
131. Schöllenbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkrieg*, Anlage 18. See also Walther, *Creating Germans Abroad*, 88. Press speaks about 2,400 miles (3,900 kilometers) by 1912. Press, *Blood and Diamonds*, 108.
132. Maria Karow, *Wo sonst der Fuß des Kriegers trat: Farmerleben in Südwest nach dem Kriege* (Berlin, 1909), vi.
133. BArch-B, R 1002/1805 (Bd. 1), Personalakte Landrat von Uslar, letters 22 January and 23 January 1906; BArch-B, R 34/926, Abschrift; National Archives Namibia (NAN), ZBN, 1410 P.IV.B.2, Aufsuchung unterirdischer Wasseradern durch Wünschelrutengänger. Specialia (1906–07), letters 22 January and 23 January 1906. See also Martin Kalb, "The Dowsing Debate: Water, Science, and Colonialism in German Southwest Africa," *German History* 39, no. 1 (2020): 568–93.
134. *Deutsche Kolonialzeitung*, "Aus unseren Kolonien: Südwestafrika: Wassererschließung," 18 August 1906. See also Georg Franzius, ed., *Bericht über die Tagung des Verbandes zur Klärung der Wünschelrutenfrage in Halle a.S.* (Stuttgart, 1914), 20; *Zentralblatt für Wasserbau und Wasserwirtschaft*, "Die Erfolge der Wünschelrute in Deutsch-Südwest," 10 November 1906; NAN, BKN, 1, Acta a., Betrifft: Allgemeines der Kolonne (1906), (letter Von Lindequist, 17 May 1906).
135. *Deutsche Kolonialzeitung*, "Aus unseren Kolonien: Südwestafrika: Wassererschließung." 18 August 1906. See also Deutscher Landwirtschaftsrat XXXIII, "Die Wasserversorgung in unseren Kolonien," *Sonderabdruck aus dem Archiv des Deutschen Landwirtschaftsrats* (Berlin, 1909), 61–63.
136. Hintrager, *Südwestafrika in der deutschen Zeit*, 174. See also BArch-K, N 1037/8, Nachlass Hintrager, Organisationsplan für die Wassererschließung in Deutsch-Südwestafrika.
137. BArch, R 1001/1142, Ansiedlung insbesondere deutscher Bauern, Von Lindequist Denkschrift über die Besiedelung Deutsch-Südwestafrikas, 19 September 1906. See also Schöllenbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 63; "Organisationsplan für die Wassererschliessung in Deutsch-Südwestafrika," v. April 1906, Stenographischer Bericht Reichstag, 12 LP/ 1, Sess, 1907/08, Nd. 239, Nr. 10. Nach p. 3, as quoted in *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika 1884–1914,* 438.
138. NAN, BKN and BKS, 1903–1915, Finding Aid, A.C. Stern (Aug. 1972); *Deutsches Kolonialblatt*, "Wassererschliessung in Deutsch-Südwestafrika," 1 and 5 November 1910. See also Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 135.
139. *Windhuker Nachrichten*, "Jahresbericht über die Entwicklung von Deutsch-Südwestafrika im Jahre 1906/07," 15 April 1908.
140. *Deutsche Kolonialzeitung*, "Wassererschliessung in Deutsch-Südwestafrika," 22 July 1911. Until 1911 funding did not come from a regular budget line.
141. *Deutsch-Südwestafrikanische Zeitung*, "Eine Verwendung für Mittel aus der Wohlfahrtslotterie," 17 February 1909. See also Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12*, 138.
142. *Lüderitzbuchter Zeitung*, "Farmer Motor-Pumpen," 30 September 1911.
143. Johannes Gad, *Die Betriebsverhältnisse der Farmen des mittleren Hererolandes (Deutsch-Südwestafrika)* (Hamburg, 1915), 42.

144. *Südwest*, "Was wird aus der Wassererschließung im kommenden Etatsjahre?" 24 November 1911.
145. *Windhuker Nachrichten*, "Jahresbericht über die Entwicklung von Deutsch-Südwestafrika im Jahre 1906/07," 15 April 1908.
146. *Deutsche Kolonialzeitung*, "Südwestafrikanisches Allerlei," 18 July 1908.
147. NAN, BKS, 19, 8., Sammelakte betr. Bohrangelegenheiten, Etatsvorschläge, Auszüge der Schriften Dr. Ranges, Jahresberichte (1907–15), *Vorschlag* Lotz und Rohrbach, 1910. See also *Amtliche Mitteilungen*, 1910/11 (1912), 120; *Kolonie und Heimat* IV, no. 22, "Brunnenbau in Südwest," 1911.
148. *Amtliche Mitteilungen*, 1910/11 (1912), 119. See also NAN, BKN, 7, B. 3a Verzeichnis über fertiggestellte Bohrungen, Stand des Personals, Personalangelegentheiten, Zugtier (1909–13), (Bericht der Bohrkolonne-Nord über ihre Tätigkeit im Rechnungsjahr 1910, 8 April 1911).
149. Gad, *Die Betriebsverhältnisse der Farmen des mittleren Hererolandes*, 33.
150. NAN, BKN, 7, B. 3a Verzeichnis über fertiggestellte Bohrungen, Stand des Personals, Personalangelegentheiten, Zugtier (1909–13), (Verzeichnis der im Distrikt Okahandja fertiggestellten Bohrungen in der Zeit vom Jahre 1906 bis 31. März 1911).
151. Moritz Bonn, "German Colonial Policy," *United Empire Magazine* V, no. 2 (1914), 129, as quoted in Gordon, "Hiding in Full View," 32.
152. NAN, BKS, 7, B.23., Beschwerden und Reklamationen (1912–14), Kais. Distriktamt, Beglaubigte Abschrift, 17 September 1913.
153. Ibid., Brief, Range, 29 September 1913. Kakub's testimony, one of the few voices available from African workers, described the situation from his perspective. See NAN, BKS, 7, B.23., Beschwerden und Reklamationen (1912–14), Kais. Distriktamt, Beglaubigte Abschrift, Protokoll, 22 September 1913.
154. *Südwest*, "Was wird aus der Wassererschließung im kommenden Etatsjahre?" 24 November 1911.
155. *Der Südwestbote*, "Besiedlung und Wassererschliessung," 18 November 1911.
156. *Amtliche Mitteilungen, 1910/11* (1912), 120. See also *Amtsblatt für das Schutzgebiet Deutsch-Südwestafrika,* "Bekanntmachung," 1 May 1911; *Amtliche Mitteilungen, 1911/12* (1913), 118. For subsequent calls for action, see *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Die Wassererschliessung in Deutsch-Südwestafrika," 1 May 1912; *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Bohrtätigkeit in Deutsch-Südwestafrika und Britisch-Südafrika," 1 February 1913.
157. *Der Südwestbote*, "Besiedlung und Wassererschliessung," 18 November 1911. For similar complaint, see also *Lüderitzbuchter Zeitung*, "Briefkasten der Redaktion," 21 October 1911.
158. NAN, BKN, 1, Akta b (Band 2): betr. Verfügung des Reichskolonialamts und Gouvernements (1908/09), (Jahresbericht, 16 July 1908).
159. *Der Südwestbote*, "Besiedlung und Wassererschliessung," 18 November 1911. See also *Der Südwestbote*, "Windhuk und Umgebung. Zur Wasserfrage," 5 June 1912; *Der Südwestbote*, "Ende des Wassermangels?" 19 July 1912.
160. Franzius, *Tagung des Verbandes zur Klärung der Wünschelrutenfrage*, 27.
161. Clara Brockmann, *Briefe eines deutschen Mädchens aus Südwest* (Berlin, 1912), 30, as quoted in Udo Krautwurst, "Water-Witching Modernist Epistemologies and Dowsing

Realities: Exporting Models of Non-Rationality Through Colonial and Development Discourses." *Anthropology Review* 21, no. 2 (1998): 71–82, here 73.

162. Brockmann, *Briefe eines deutschen Mädchens aus Südwest*, 33.
163. NAN, BKS, 4, B.8., Bohrungen für Private (1910–12), Forkel an Bohrkolonne-Süd, 13 May 1911.
164. Ibid., 19 August 1911.
165. Ibid., 28 September 1911.
166. Ibid., 9 October 1911. See also NAN, BKS, 4, B.8., Bohrungen für Private (1910–12), Forkel an Bohrkolonne-Süd, 11 October 1911
167. NAN, BKS, 7, B.23., Beschwerden und Reklmationen (1912–14), Forkel an Bohrkolonne-Süd, 3 November 1913. See also NAN, BKS, 7, B.23., Beschwerden und Reklamationen (1912–14), Forkel an Bohrkolonne-Süd, 27 November 1913.
168. Rathenau, *Industrialist, Banker, Intellectual, and Politician*, 88.
169. *Deutsch-Südwestafrikanische Zeitung*, "Wasserfrage im Süden," 19 September 1908. See also *Deutsch-Südwestafrikanische Zeitung*, "Wasserfrage im Süden," 19 September 1908.
170. BArch-B, R F 151, Wasser-Erschliessung, P. II. C1., Band 1 (microfilm roll 82992), Bericht über eine zwecks Wassererschließung im Bezirk Rehoboth von Bergassessor Dr. Niess unternommene Dienstreise, 18 October–13 November 1911.
171. Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 156.
172. Karow, *Wo sonst der Fuß des Kriegers trat*, 54.
173. Ibid., 69.
174. Stengel, 1970, 16–20, as referenced in Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 163. See also Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 134.
175. Ferdinand Gessert, "Ueber rationelle Bewässerung in D.-S.-W. Afrika. Saatdamm oder Talsperre," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VIII, no 2. (February, 1906). See also Semler, *Meine Beobachtungen in Süd-West-Afrika*, 19–20.
176. *Kolonie und Heimat*, "Koloniale Neuigkeiten: Südwestafrika," 2 February 1908. See also Richard Hennig, "Wasserwirtschaftliche Probleme in Deutsch-Südwestafrika," *Technik und Wirtschaft: Monatsschrift des Vereins Deutscher Ingenieure* 1, no. 6 (June 1908); Zwergern "Wasserbeschaffung in Deutsch-Südwest-Afrika," *Deutsch-Südwestafrikanische Zeitung*, 24 April 1907; NAN, ZBU, 1407, P. III. H. 2 Grundwassersperren (Grundwehre) nach der Methode des von Zwergen. Specialia (1907–14).
177. *Deutsch-Südwestafrikanische Zeitung,* "Bewässerungs-Anlagen," 29 March 1912. See also *Koloniale Rundschau*, "Ackerbau in Deutsch-Südwestafrika von Franz Kolbe, Oberleutnant a.D., Berlin," no 6 (June 1913), 332–45, here 344; *Der Südwestbote*, "Wassergewinnung in D.S.W.," 7 February 1913.
178. Reichstag 1907, as quoted in Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 135. See also NAN, BKN, 14, 40, Dammbauhilfen.
179. Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1909/10*, 138
180. Hintrager, *Südwestafrika in der deutschen Zeit*, 141.
181. NAN, BKN, 1, Akta b (Band 2): betr. Verfügung des Reichskolonialamts und Gouvernements (1908/09), (Brief, Hintrager, 28 October 1908). Such funds ran low various times. NAN, BKS, 18, S.10 Stauanlagen (1909–13), Kaiserlicher Gouverneur, 23 December 1909. See also *Deutsche Kolonialzeitung*, "Die Wasserführung der Flüsse in Südwestafrika und der Regen," 6 March 1909 (Dove).

182. Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1909/10*, 138
183. In 1912/13, the *Deutsche Kolonialgesellschaft* provided 60,000 Marks to help out. See Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/*, 138
184. BAB, PA.101, Farmarchiv Otto Brinkman, letter December 1909. See also BAB, PA.101, Farmarchiv Otto Brinkman, letter 15 April 1910.
185. *Keetmanshooper Zeitung*, "Staudämme und Dammbau-Kolonnen," 24 April 1913. See also *Keetmanshooper Zeitung,* "Staubecken und Staudämme," 1 May 1913; *Keetmanshooper Zeitung,* "Staubecken und Staudämme," 8 May 1913.
186. Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 146–47.
187. *Der Südwestbote*, "Wasserrecht für Südwest," 29 March 1911. See also *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika,* "Entwurf einer Wasserverordnung für Deutsch-Südwestafrika," 21 February 1914; *Deutsche Kolonialzeitung*, "Rundschau: Wasserverordnung für Südwestafrika," 18 April 1914.
188. *Südwest*, "Wassermassen im 'trockenen' Südwestafrika," 9 January 1912. See also *Der Farmer*, "Wasser-Erschliessung," 25 May 1910; *Südwest*, "Wassererschliessung und Meliorationsgesellschaft: Ein Farmerbrief," 18 August 1911. Manuals and guides helped a little. See Steiner, "Anleitung zur Errichtung von Stauanlagen auf Farmen," *Landwirtschaftliche Beilage des Amtsblatts für das Schutzgebiet Deutsch-Südwestafrika*, 1 December 1913; Kaiserliches Gouvernement von Deutsch-Südwestafrika, ed., Anleitung zur Errichtung von Stauanlagen, accessible at NAN, ZBU, 1394, P. III. A. 1 Staudämme und Grundwehre. Generalia (1903–14); Lotz, "Der Bau von Farmdämmen," 226–31, in Kuhn and Schwabe, *Taschenbuch für Südwestafrika.*
189. Arthur Golf, *Ackerbau in Deutsch-Südwestafrika: Das Trockenfarmen und seine Anwendung in D.S.W.A.* (Berlin, 1911), 8. See also *Koloniale Rundschau*, "Ackerbau in Deutsch-Südwestafrika von Franz Kolbe, Oberleutnant a.D., Berlin," no. 6 (June 1913): 332–45, here 335.
190. Golf, *Ackerbau in Deutsch-Südwestafrika*, 8–9. See also Arthur Golf, "Untersuchungen über die natürlichen Grundlagen der nordamerikanischen Bewässerungswirtschaft" (PhD diss, University of Halle, 1903); *Der Südwestbote*, "Schutzgebiets-Chronik. Ueber neue Versuche künstlicher Regenerzeugung," 15 March 1911.
191. William MacDonald, "The Principles of Dry-Farming," *Transvaal Agricultural Journal* 8, no. 29 (1909), 100–10, here 109. See also Heinrich S. Du Toit, *Dry-Farming* (Potchefstroom, South Africa, 1913); Sarah T. Phillips, "Lessons from the Dust Bowl: Dryland Agriculture and Soil Erosion in the United States and South Africa, 1900–1950," *Environmental History* 4, no. 2 (1999), 245–66, here 250.
192. *Der Tropenpflanzer* XI, no. 9, "Farmbetrieb in Arizona, ein Wink für Südwestafrikaner," September 1907. See also *Der Farmer: Mitteilungen über Farm-, Garten-, Forstwirtschaft und Bergbau*, "Farmbetrieb in Arizona, ein Wink für Südwestafrikaner," 15 January 1908.
193. Golf, *Ackerbau in Deutsch-Südwestafrika*, 30; Thomas Shaw, *Dry Land Farming* (St. Paul, 1911), 39. See also Hardy Webster Campell, *Campell's 1907 Soil Culture Manual: A Complete Guide to Scientific Agriculture as Adapted to the Semi-Arid Regions* (Lincoln, 1909). Discussions were widespread in the paper *Der Farmer*.
194. Golf, *Ackerbau in Deutsch-Südwestafrika,* 47–64.
195. *Südwest*, "Interessant Versuch emit Trockenfarmerei im Sandfeld," 6 October 1911. See also *Der Südwestbote*, "Schutzgebiets-Chronik: Versuche mit Trockenfarmen im

Sandfelde," 14 January 1912; *Koloniale Rundschau*, "Ackerbau in Deutsch-Südwestafrika von Franz Kolbe," no 6 (June 1913), 332–45, here 340–41.

196. *Deutsch-Südwestafrikanische Zeitung,* "Trockenfarmerei und Masseneinwanderung in Südwest," 15 April 1913. See also *Deutsch-Südwestafrikanische Zeitung,* "Trockenfarmerei und Masseneinwanderung in Südwest," 15 April 1913; *Deutsch-Südwestafrikanische Zeitung,* "Trockenfarmerei," 12 July 1913.
197. Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche*, 125. See also *Der Südwestbote*, "Jahresbericht der Kaiserlichen Versuchstation für Trockenkultur in Neudamm 1912/13," 4 January, 11 January, and 18 January 1914; *Keetmanshooper Zeitung*, "Zur Trockenlandkultur," 31 July 1913.
198. *Koloniale Rundschau*, "Ackerbau in Deutsch-Südwestafrika von Franz Kolbe," no 6 (June 1913): 332–45, here 340.
199. Ferdinand Gessert, "Über rentable Wasserstauung in Deutsch-Südwest-Afrika," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtscha*ft VII, no 11 (Oct. 1905). For later discussions see *Windhuker Nachrichten*, "Ackerbau und Gartenwirtschaft in Südwestafrika," 1 September 1909; *Südwest*, "Koloniale Wasserwirtschaft auf dem Kongreß," 3 March 1910; *Lüderitzbuchter Zeitung*, "Mehr Wasserwirtschaft in den deutschen Kolonien," 30 September 1911 (Hennig). See also *Deutsch-Südwestafrikanische Zeitung,* "Die Talsperre der Naute," 9 August 1912; *Deutsch-Südwestafrikanische Zeitung,* "Talsperren und Dammbauten," 9 January 1913; *Deutsch-Südwestafrikanische Zeitung,* "Nautesperre bei Keetmanshoop," 23 January 1913.
200. Rudolf Schmick, *Gutachten über die Talsperrenanlage an der Naute im Löwenfluss* (Darmstadt, 1907), 28–30.
201. Richard Hennig, "Aufgaben der Wasserwirtschaft in Südwestafrika," *Die Turbine*, 1909, 332.
202. Schmick, "Die Wichtigkeit der Bewässerung in Deutsch-Südwestafrika und Deutsch-Ostafrika," in *Jahrbuch über die deutschen Kolonien, IV Jahrgang*, ed. Karl Schneider, 144–50, here 147 (Essen, 1911).
203. *Südwest*, "Koloniale Wasserwirtschaft auf dem Kongreß," 3 March 1910.
204. Schmick, "Die Wichtigkeit der Bewässerung in Deutsch-Südwestafrika und Deutsch-Ostafrika," in Schneider, *Jahrbuch über die deutschen Kolonien,* 150.
205. Ibid.
206. NAN, ZBU, 1402 P.III.F.3 Dammbauprojekt Betr. Naute am Löwenfluss (1903–14), Range, "Untersuchung des Steinmaterials an der Naute auf die Möglichkeit zur Herstellung von Bauten," 22 October 1908. See also NAN, ZUB, 1402 P.III.F.4 Dammbauprojejt Betr. Kleine Naute (1903–13), Range, Geologisches Gutachten, 1909.
207. *Südwest*, "Südwest und Südafrika," 6 February 1912 (G. Voigts). Carl Schlettwein remained critical. See Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 196–97; *Kolonie und Heimat* III, no. 10, "Deutsche Farmen in Südwest. Schlettweins Farm Otjitambi," 30 January 1910.
208. *Südwest*, "Wassererschliessung im Etat 1912," 19 April 1912.
209. Press, *Blood and Diamonds*, 199.
210. NAN, ZUB, 1402 P.III.F.3 Dammbauprojekt Betr. Naute am Löwenfluss (1903–14), Solf, letter, 17 June 1912. Solf compared the situation in Southwest Africa to South Africa and the American West. See BArch-B, R 1001/1496, Informationsreise des Staatssekretärs Dr. Wilhelm Solf, Teile von British-Südafrika Muster für die wirtschaftliche

Entwicklung von Südwestafrika, 1912. See also: BArch-B, R 1001/1497, Informationsreise des Staatssekretärs Dr. Wilhelm Solf.

211. NAN, ZUB, 1402 P.III.F.3 Dammbauprojekt Betr. Naute am Löwenfluss (1903–14), South African Territories Ltd., 23 August 1912; NAN, ZBU, 1404, P. III. F 10 Erkundung des Fischflusses und der Benachbarten Flüsse (1912–13).
212. BArch-K, N 1138/59, Nachlass Ludwig Kastl, "Denkschrift betreffend den Abbau des großen Fischflusses zur Gewinnung seiner Wassermengen zu Kulturzwecken." See also *Der Südwestbote*, "Denkschrift betreffend den Abbau des großen Fischflusses zur Gewinnung seiner Wassermengen zu Kulturzwecken," 5 and 9 November 1913.
213. KIT, 27025, 29, Übersichtsplant der Fischflusstalsperre I bei Komotsas in DSWA, aufgestellt vom Kaiserl. Gouvernement in Windhuk, M 1:10.000, Nov. 1913, 1913. See also *Keetmanshooper Zeitung*, "Das Fischflußprojekt im Landesrat genehmigt," 20 November 1913; *Deutsche Kolonialzeitung*, "Rundschau: Wassernutzung im Fischfluss," 15 December 1913.
214. *Der Südwestbote*, "Ost- und südwestafrikanische Wasserprojekte," 6 May 1914. See also NAN, ZBU, 1404, P. III. F 10 (vol. 2) Erkundung des Fischflusses und der Benachbarten Flüsse (1913–14), Landratsversammlung. 16 July 1914. The previous filed ends in 1914 with a call for more funds; NAN, ZBU, 1404, P. III. F 10 Erkundung des Fischflusses und der Benachbarten Flüsse (1912–13).
215. *Keetmanshooper Zeitung*, "Das Fischflußprojekt im Landesrat genehmigt," 20 November 1913. See also *Südwest*, "Eine große Bewässerungsanlage," 10 June 1913; *Deutsche Kolonialzeitung*, "Rundschau: Bewässerungsanlage im Khomashochland," 19 July 1913; NAN, ZBU, 1404, P. III. F. 9 Dammbauprojekt Bethanien (1912–14); NAN, ZBU, 1404, P. III. F 11 Dammbauprojet Aus (1912–13).
216. Stern and Lau, *Namibian Water Resources and Their Management*, 63. See also Stern and Lau, *Namibian Water Resources and their Management*, 63. See also Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 175.
217. Paul Range, "Wassererschließung in den Trockengebieten der deutschen afrikanischen Schutzgebiete," *Tropenpflanzer* 43 (1940), 1–7, here 4. See also Krenkel, *Geologie der Deutschen Kolonien in Afrika*, 210. Krenkel speaks of sixty-four kilometers total when it comes to drilling.
218. Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 8. Schlettwein complained about a lack of drilling equipment in some regions. Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 17–18.
219. *Deutsche Kolonialzeitung*, "Wassererschliessung in Deutsch-Südwestafrika," 22 July 1911. See also *Amtliche Mitteilungen, 1910/11* (1912), 119; *Deutsch-Südwestafrikanische Zeitung,* "Deutsch-Südwestafrika im Jahre 1910/11," 23 March 1912. Schöllenbach made a similar claim in the 1920s. See Schöllenbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 67.
220. Hennig, *Sturm und Sonnenschein in Deutsch Südwest*, 25.
221. *Koloniale Rundschau*, "Die Entwicklung Deutsch-Südwestafrikas im Jahre 1907/08 von Dr. M. Bonn, Privatdozen in München," 1909, 257–65, here 259–63. See also Schöllenbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 69; *Lüderitzbuchter Zeitung*, "Die große Wasserfrage," 25 November 1911.
222. Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 133 (table 22).

223. Ibid., 158 and 163. See also Hintrager, *Südwestafrika in der deutschen Zeit*, 140–41.
224. Erichsen, *What the Elders Used to Say*, 61.
225. *Der Tropenpflanzer* XIII, no. 3 and no. 4, "Ueber die Komponenten des Wasserbedarfs der Nutzgewächse mit besonderer Berücksichtigung tropischer Verhältnisse," March and April 1904 (Vageler); *Der Tropenpflanzer* XV, no. 8, "Vermischtes. Der Anbau der Luzerne mit Bewässerung in subtropischen Ländern," August 1911 (Ludewig).
226. BArch-K, N 1037/10, Nachlass Hintrager, Protokoll über die Sitzung des Landesrats von Südwestafrika (May 1914).
227. "Koloniale Neuigkeiten," *Kolonie und Heimat*, VI, no. 43.
228. Henning, *Sturm und Sonnenschein in Deutsch-Südwest*, 63.
229. Hintrager, *Südwestafrika in der deutschen Zeit*, 170–73.
230. Hans Grimm, *Gustav Voigts: Eine Leben in Deutsch-Südwestafrika* (Gütersloh, 1942), 73.
231. Hintrager, *Südwestafrika in der deutschen Zeit*, 169.
232. [n.a.] "Tierzucht. Aus dem amtlichen Berichten über Tierzucht," in Kuhn and Schwabe, *Taschenbuch für Südwestafrik*a, 274–86, here 282. See also Herbert Hanlenke, "Viehwirtschaft in Deutsch-Südwestafrika," *Mitteilungen der Gruppe Deutscher Kolonialwirtschaftlicher Unternehmungen* 5 (1942): 61–148, here 87–92.
233. Corinna Treitel, *Eating Nature in Modern Germany: Food, Agriculture and Environment, c. 1870 to 2000* (Cambridge, 2017), 121. See also Christoph Nonn, "Fleischteuerungsprotest und Parteipolitik im Rheinland und im Reich, 1905–1914," in *Der Kampf um das tägliche Brot: Nahrungsmangel, Versorgungspolitik und Protest 1770–1990,* ed. Manfred Gailus and Heinrich Volkmann, 305–18 (Opladen, 1994).
234. *Allgemeine Zeitung*, "Wie ist der Fleischnot dauernd abzuhelfen?" 17 December 1910; *Allgemeine Zeitung*, "Zur Frage der Fleischversorgung," 5 January 1911, all accessible in BArch-B, R 1001/1826 and 1827, Fleisch- Ein- und Ausfuhr nach und aus Deutsch-Südwestafrika.
235. *Straßburger Post*, "Unsere Kolonien als Fleischlieferant," 3 January 1911; *Die Post*, "Die Bekämpfung der Fleischteuerung," 10 September 1912 (and more newspaper clippings) all accessible in BArch-B, R 1001/1826 and 1827, Fleisch- Ein- und Ausfuhr nach und aus Deutsch-Südwestafrika. *Der Tropenpflanzer* also reported extensively. See also Herbert Halenke, "Das Ringen um Märkte: Fleischwirtschaft und -industrie," in Becker and Hecker, *1884–1984*, 233–246.
236. H. Mehner, "Ein Weg zur Verwertung des Fleischüberschusses in Südwest," *Kolonie und Heimat* VI, no. 22.
237. *Leipziger Neuste Nachrichten*, "Frankreichs Fleischversorgung aus den Kolonien," 31 August 1912, as accessible in BArch-B, R 1001/1826, Fleisch- Ein- und Ausfuhr nach und aus Deutsch-Südwestafrika. See also Reichstag, 30. Sitzung, 19 March 1912, 831. Retrieved 13 April 2021 from www.reichstagsprotokolle.de.
238. *Der Tropenpflanzer* XVII, no. 4, "Auszüge und Mitteilungen," April 1913. The London-based *Liebig's Extract of Meat Company*, tied to the *Deutsche Farmgesellschaft* (German farm society) established in 1907, had already been involved in the colony. "Deutsche Farmgesellschaft," in *Deutsches Kolonial-Lexikon*, Band I, 300.
239. BArch-B, R 1001/1827, Begutachtung einiger Sendungen Gefrierfleisch. See also BArch-B, R 1001/1827, Fleisch- Ein- und Ausfuhr nach und aus Deutsch-Südwestafrika, Bericht 2 February 1914.

240. Helge Bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 58, no. 1 (1971): 67–87, here 68.
241. Ibid., 69–70. See also Halenke, "Viehwirtschaft in Deutsch-Südwestafrika," 121.
242. bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 71. At its foundation it had 664,500 Mark in capital. See also Wedekind, *Impfe und herrsche*, 181.
243. F. Schultz, "Die Schafwolle im Hinblick auf die Schaf- und Ziegenzucht in Deutsch-Südwestafrika: Ein Beitrag zur Kenntnis unserer Kolonien," *Koloniale Abhandlungen* V (Berlin, 1906), 22, as referenced in bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 68. See also Dr. Schulz, "Die Schafwolle in Hinblick auf die Schaf- und Ziegenzucht in Deutsch-Südwesrtafrika, ein Beitrag zur Kenntnis unserer Kolonie," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VII, no 11 (Oct. 1905).
244. Hintrager, *Südwestafrika in deutscher Zeit*, 110, as referenced in bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 69. See also Bernhard Dernburg, *Südwestafrikanische Eindrücke. Industrielle Fortschritte in den Kolonien. Zwei Vorträge* (Berlin, 1909).
245. Hermann, *Viehzucht und Bodenkultur in Südwestafrika*, 58, as referenced in bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 69.
246. Import was 217,977 tons; export only reached 17,198 tons. See *Statistisches Jahrbuch für das Deutsche Reich* XXXVI (Berlin, 1915), 193, as referenced in bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 69. See also *Der Tropenpflanzer* XVIII, no. 5, "Schafzucht und Wollproduktion in Deutsch-Südwestafrika," May 1914 (Behnsen); *Der Südwestbote*, "Zur Frage der Wollschafzucht in Südwestafrika," 19 March 1913; BArch-B, R 1001/1833, Ausfuhr von Angoraziegen, Straußen und Straußenfedern, 1904–1908, Auszug Wollfschafzucht.
247. F. Hermann, "Die Wollschafzucht in Südwest und die Schäferei Nomtsas," *Kolonie und Heimat* VI, no. 33. See also bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 72.
248. bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 72–73; Paul Rohrbach, "Wollschafzucht in Südwest," *Kolonie und Heimat* VII, no. 37.
249. Raimar von Hase, "Persianer aus Afrika," 180–84, here 180, in Becker and Hecker, *1884–1984.* See also Semler, *Meine Beobachtungen in Süd-West-Afrika*, 34; Leipziger, "Ueber die Einführung von Zuchttieren mit besonderer Berücksichtigung der Karakulschafe," in Kuhn and Schwabe, *Taschenbuch für Südwestafrik*a, 287–93, here 290; Lau and Reiner, *100 Years of Agricultural Development*, 57; Hintrager, *Südwestafrika in der deutschen Zeit*, 169; Karl Walter Spitzner and Heinrich Schäfer, eds., *Die Karakulzucht in Südwestafrika und das Haus Thorer* (Cape Town, 1962), 4. *Der Tropenpflanzer* reported widely on this topic.
250. bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 72.
251. Sarah Abrevaya Stein, "'Falling into Feathers': Jews and the Trans-Atlantic Ostrich Feather Trade," *The Journal of Modern History* 79, no. 4 (2007): 772–812, here 779.
252. Ibid., 780–81.
253. Ibid., 773.
254. *Südwest*, "Wie fängt man eine Straußenzucht an?" 7 July 1911.
255. Wilhelm Bassermann, *Der Strauß und seine Zucht* (Berlin, 1911); Carl Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 169.

256. Kurt Dinter, *Anbau von Luzerne für Strauße* (Swakopmund, 1912). See also *Lüderitzbuchter Zeitung*, "Künstliche Berieselung für Luzerneland," 14 October 1911; *Südwest*, "Künstliche Berieselung für Luzerneland," 27 October 1911.
257. *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika,* "Wie sollen wir unsere Straußenzucht in Deutsch-Südwestafrika einrichten?" 1 December 1912; H. Scherer, Wie wollen wir unsere Straußenzuchbetriebe in Deutsch-Südwestafrika einrichten? (Berlin, 1912). See also *Der Tropenpflanzer* XVIII, no. 7, "Straußenzucht und Straußenfeder-Handel in Südafrika und anderen Ländern," July 1914 (Hintze).
258. *Amtliche Jahresberichte*, 1912/13, 146. By 1913, a total of 1,507 tamed ostriches lived in the colony. See *Deutsches Kolonial-Lexikon* (1920), Band III, 429 (Neumann).
259. [n.a.] "Landwirtschaft. Aus den amtlichen Berichten über Garten-, Feld- und Forstwirtschaft," in Kuhn and Schwabe, *Taschenbuch für Südwestafrik*a, 231–58, here 253–55.
260. Moritz Schanz, "Der koloniale Baumwollanbau," in *Verhandlungen des deutschen Kolonialkongresses 1910,* 814–17, here 817 (Berlin: Reimer, 1910), as quote in Corey, *Ecology and Power in the Age of Empire*, 45.
261. *Deutsches Kolonial-Lexikon* (1920), "Baumwolle," Band I, 147.
262. Ludwig Wunderlich, "Ueber Tabakbau," in Kuhn and Schwabe, *Taschenbuch für Südwestafrik*a, 259–74, here 261.
263. *Deutsches Kolonialblatt*, "Anleitung zum Tabakanbau in Deutsch-Südwestafrika, I," 15 June 1902 and (II) 1 July 1902; *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Tabakbau in Deutsch-Südwestafrika," 15 December 1902.
264. *Deutsches Kolonial-Lexikon* (1920), Band III, 445.
265. *Amtliche Mitteilungen*, 1911/12 (1913), 126. See also *Amtliche Jahresberichte*, 1912–13, 148; *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika,* "Ueber den Tabakbau in Deutsch-Südwestafrika," 1 October 1911, 1 November 1911, and 1 December 1911. For a broader discussion see Martin Kalb, "Tobacco Fantasies? German Tobacco Cultivation in Southwest Africa" (paper presented at the workshop/conference Rethinking Tobacco History: Commodities, Empire and Agency in Global Perspective 1780–1960, online 1–4 December 2021).
266. *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika,* "Der Tabakbau in Südwestafrika," 1 March 1914. See also Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 38.
267. Richard Hennig, "Aufgaben der Wasserwirtschaft in Südwestafrika," *Die Turbine*, 1909, 333. See also *Deutsche Kolonialzeitung*, "Beschaffung von Wasser in Deutsch-Südwestafrika," 6 August 1903; *Deutsche Kolonialzeitung*, "Zur Wasserfrage in Südwestafrika," 20 August 1903; *Deutsche Kolonialzeitung*, "Aufforstung in Deutsch-Südwestafrika," 26 November 1903; *Deutsche Kolonialzeitung*, "Rundschau: Die Aufforstung des Reviers von Windhuk," 21 October 1911. For recent discussions see Lars Kreye, *"Deutscher Wald" in Afrika. Koloniale Konflikte um regenerative Ressourcen, Tansania 1892–1916* (Göttingen, 2021), 126f.
268. *Der Südwestbote,* "Wasserverhältnisse in Südwest," 19 November 1913.
269. Siiskonen, "The Concept of Climate Improvement," 293. See also *Deutsche Kolonialzeitung*, "Beschaffung von Wasser in Deutsch-Südwestafrika," 29 July 1903.
270. *Globus,* "Zur Aufforstungsfrage in Südwestafrika," 1904 (Gessert), as quoted in Siiskonen, "The Concept of Climate Improvement," 294. See also KIT, 27025, 32, *Zeit-*

*schrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft, Sonderabdruc*k, "Die mutmasslichen klimatischen Folgen einer Kunene-Ableitung," von Ferdinand Gessert, Deutsch-Südwestafrika; KIT, 27025, 32, *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft, Sonderabdruck*, "Die mutmasslichen klimatischen Folgen einer Kunene-Ableitung," von Ferdinand Gessert, Deutsch-Südwestafrika. *Der Tropenpflanzer* reported widely as well.

271. Schweichel to Governor von Lindequist, Berlin 9 Apr. 1907, NAN, ZBU 1169, M.1.a.1.Bd.1. Forstwirtschaft: (Verwaltung, Aufforstung pp.) 1886–1915, 96–99; Schweichel to Governor von Lindequist, Berlin 17 Apr. 1907, NAN, ZBU 1169, M.1.a.1.Bd.1. Forstwirtschaft: (Verwaltung, Aufforstung pp.) 1886–1915, 100–2, as referenced in Siiskonen, "The Concept of Climate Improvement," 295.
272. Pogge's comments on Schweichel's proposal, Windhoek 18 Aug.1907, 22 Aug, NAN, ZBU 1169, M.1.a.1.Bd.1. Forstwirtschaft: (Verwaltung, Aufforstung pp.) 1886–1915, 103 as referenced in Siiskonen, "The Concept of Climate Improvement." See also Siiskonen, "The Concept of Climate Improvement," 281.
273. *Windhuker Nachrichten*, "Nutzholzkultur," 1 September 1909.
274. *Windhoeker Anzeiger*, "Die forstwirtschaftliche Station Brakwater," 25 October 1900.
275. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet: Aufforstung," 18 August 1903.
276. BArch-B, R 1001/7687, Forstwesen in Deutsch-Südwestafrika. Allgemeines Gouvernment Deutsch Südwestafrika, Brief, 29 September 1908. See also BArch-B, R 1001/7688 Forstwesen in Deutsch-Südwestafrika. Allgemeines.
277. Erkkilä and Siiskonen, *Forestry in Namibia*, 94. See also [n.a.] "Landwirtschaft. Aus den amtlichen Berichten über Garten-, Feld- und Forstwirtschaft," 231–58.
278. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 175.
279. Layout of the Forest Station Grootfontein in 1914, NA ZBU I.VIII.d.5, as referenced in Lau and Reiner, *100 Years of Agricultural Development*, 88. See also "Annual Report of the Agricultural Experimental Station Grootfontein 1913/14," as referenced in Lau and Reiner, *100 Years of Agricultural Development*, Appendix B, 65–71.
280. Erkkilä and Siiskonen, *Forestry in Namibia*, 83.
281. ZBU Nr. 156, A. VI.a.3.Bd. 18, pp. 192–194, NAW; ZBU nr. 156, A.VI.a.3.Bd. 18, 198–199, NAW as referenced in Erkkilä and Siiskonen, *Forestry in Namibia*, 92. See also *Südwest*, "Der Fluch unseres alten und neuen Baumbestandes," 8 August 1913; *Südwest*, "Wie pflanzt man Bäume, schützt und erhält sie," 12 August 1913.
282. *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika,* "Jahresbericht des Gouvernementsgartens und des Forstgartens in Windhuk, sowie der Obstbaumschule in Klein-Windhuk 1912/13," 1 January 1914. The *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika* includes detailed annual reports focusing on forestry and other experimental stations.
283. Walther, *Creating Germans Abroad*, 24. The total white population was 14,830 in 1913. Walther, *Creating Germans Abroad*, 25. See also Drechsler, "*Let Us Die Fighting*," 243–44.
284. Johannes Gad, "Besiedlungs-Fortschritt und Besitzstand der Farmwirtschaft in Deutsch-Südwestafrika," 36–48, in, *Mitteilungen aus den Deutschen Schutzgebieten*, ed. H. Marquadsen (Berlin, 1914).

285. *Der Tropenpflanzer* XIII, no 1, "Neujahrsgedanken 1909," January 1909. See also *Der Tropenpflanzer* XIII, no. 2, "Deutsche Kolonial-Gesellschaft für Südwest-Afrika," February 1909.
286. *Der Tropenpflanzer* XV, no. 1, "Neujahrsgedanken," January 1909. See also *Der Tropenpflanzer* XV, no. 8, "Auszüge und Mitteilungen. Entwicklung des Handels von Deutsch-Südwestafrika," August 1911.
287. Olusoga and Erichsen, *The Kaiser's Holocaust*, 238.
288. *Der Tropenpflanzer* XVII, no. 1, "Neujahrsgedanken 1913," January 1913 (Wohltmann).
289. Drechsler, "*Let Us Die Fighting*," 243–44. See also *Jahresbericht über die Entwicklung der Schutzgebiete in Afrika und der Südsee im Jahre 1906/07, Teil E.: Deutsch-Südwestafrika* (Berlin, 1908), 56–83.
290. Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 153.
291. Muschalek, *Violence as Usual*, 3.
292. Ada Cramer, *Weiß oder Schwarz? Lehr- und Leidensjahre eines Farmers im Lichte des Rassenhasses* (Berlin, 1913). See also Baer, *The Genocidal Gaze*, 2.
293. Steinbach, "Carved out Nature," in *Cultivating Colonies*, 64.
294. *Koloniale Rundschau*, "Der Fortschritt in der Landwirtschaft von Südwest von Dr. Josef Schneider, Wien," no. 2 (February 1913), 88–98, here 88. See also Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1912/13: Amtliche Jahresberichte* (Berlin, 1914), 135.
295. *Windhuker Nachrichten*, "Zur Rede des Herrn Abgeordneten Erzberger," 1 April 1905.
296. Kreike, "Environmental and Climate Change in Africa," 75.
297. Ibid.
298. Schwabe, *Mit Schwert und Plug in Deutsch-Südwestafrika*.
299. Walther, *Creating Germans Abroad*, 92. See also Eckenbrecher, *Was Afrika mir gab und nahm*; Falkenhausen, *Ansiedlerschicksal*, 37; Karow, *Wo sonst der Fuß des Kriegers trat*, 53.
300. Illustrierte Zeitschrift "Kolonie und Heimat," ed. *Eine Reise durch die Deutschen Kolonien. VI. Band Deutsch Südwest-Afrika* (Berlin, 1911), Vorwort.
301. *Kolonie und Heimat* I, no. 26, "Dernburgs Fahrt nach Südwest," 13 September 1908 (Berthold).
302 *Windhuker Nachrichten*, "Neu-Heimatliches," 23 June 1909 (Clara Brockmann).
303. Görke, "Südwestafrikanische Landeshymne," 1–2, in *Deutsch-Südwestafrika. Land und Leute: Eine Heimatkunde für Deutschlands Jugend und Volk*, ed. Bernhard Voigt (Stuttgart, 1913). See also Bley, *South-West Africa under German Rule*, 76.
304. Wildenthal, *German Women for Empire*, 151/152.
305. Jan-Bart Gewald, "The Herero Genocide: German Unity, Settlers, Soldiers and Ideas," in, *Die (koloniale) Begegnung: AfrikanerInnen in Deutschland (1880–1945), Deutsche in Afrika (1880–1918)*, ed. M. Bechhaus-Gerst, and R. Klein-Arendt 109–27, here 124 (Frankfurt am Main, 2003).