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A Historical Interrogation on Cattle Dipping Regulations Enforcement in Iringa, Tanzania, 1920-1961.

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Abstract

The colonial state machinery used many ways to make the dipping scheme feasible project in Iringa, Tanzania. The state machinery used both legal and bylaws to deal with cattle diseases and, indeed, the cattle herders who were not abiding with the same laws and bylaws. This article, therefore employs on historical method, to examine the enforcement of cattle dipping regulations in Iringa between 1920 and 1961. The article uses archival sources, particularly the use of Tanzania National Archives (TNA) based in Dar es Salaam and the East Africana Library section of the University of Dar es Salaam to reconstruct the Colonial state methods of policy enforcement on dipping project with a case of Iringa as a representative of other parts of Tanzania and East Africa at large. public health and livestock management policies, revealing the administrative, legal and coercive mechanisms used to regulate rural communities.

Through a close analysis of primary sources, the study investigates how livestock owners negotiated, contested, or complied with the imposed regulations. By examining the interactions between African livestock owners and colonial authorities, it highlights the agency of African communities and the strategies they employed to adapt to, resist, or engage with state interventions.

Finally, the article demonstrates how historical methods illuminate the broader dynamics of power and governance in colonial Tanganyika. It argues that the state's combination of surveillance, coercion and legal sanctions not only ensured compliance with cattle health measures but also reinforced the reach of colonial authority, offering insights into the contested and negotiated nature of rule in rural areas.

Keywords: State, Cattle, Dipping tanks, Diseases, Regulations and Rules.

Introduction

The enforcement of cattle dipping regulations in Iringa District during the British Colonial period formed a central pillar of veterinary governance between 1920 and 1961.¹ Introduced as part of a wider strategy to control rinderpest, tick-borne diseases, and cattle movement, these regulations most notably the Native Authority (Uhehe Native Authority) Cattle Dipping Rules of 1951, sought to bring African livestock owners under a regime of strict administrative supervision.² Weekly compulsory dipping mandatory reporting of herd changes, the imposition of dipping fees, and the threat of fines, imprisonment, or confiscation of cattle were all designed to regulate pastoral practices and integrate livestock production into the colonial economy.

Similar veterinary interventions were implemented across British East Africa, where compulsory dipping and stock inspections became key instruments of disease control and administrative oversight among African livestock keepers. For instance, the Maasai communities of Kajiado and Narok District in Kenya, where compulsory dipping and livestock inspection became important tools of colonial diseases control and administrative regulation.³ In Northern Province of Northern Rhodesia (present-day Zambia), particularly in the districts of Kasama and Mpika, veterinary regulations and restrictions on cattle movement were used to strengthen colonial authority while promoting livestock production.⁴ Comparable measures were also adopted in Matebele land, Mashona land in southern Rhodesia (present-day Zimbabwe), as well as in the Eastern Cape and Transkei regions of South Africa, where dipping tanks and compulsory diseases control campaigns became key instruments of colonial governance in African rural areas.⁵ These experiences demonstrate that veterinary regulation was not merely a technical response to livestock diseases but also an important mechanism through which colonial states extended administrative control over African societies.⁶

However, these regulations represented more than simply technical measures for diseases control. They were experienced as forms of coercion, interfering with established grazing routines, imposing new labour demands, and extending the reach of the colonial state into everyday rural life. Livestock owners responded in diverse ways: some complied with the regulations to avoid penalties or to secure access to dipping facilities, while others resisted through evasion, non-reporting, or open disagreement with veterinary authority. These acts of obedience and resistance shaped not only the effectiveness of the government's livestock policies but also the broader relationship between African communities and the colonial administration.

This article examines how Cattle Dipping Regulations were enforced in Iringa District, how Livestock Owners negotiated, contested, or complied with these measures, and how the Colonial State sought to maintain control through a combination of administrative surveillance, coercion, and legal sanction. In doing so, it shows the complex interplay between policy, power, and pastoral livelihoods in a region where cattle were central to economic security, social status, and cultural identity. The British colonial government introduced the economic use of livestock in Tanganyika with the aim of improving and expanding the cattle population. Particularly emphasised was placed on Iringa District and Arusha, where favourable climatic conditions encouraged European settlements. The government encouraged European settlers to establish ranches for livestock production, with the intention of exploiting African livestock through policies based on livestock diseases control, production regulations, and market control. These policies also targeted African livestock owners, requiring them to improve cattle quality while enforcing disease control measures on both African communities and European. The reports indicate that one of the key policies of the Livestock Department in Tanganyika was to improve animal health through the prevention and control of diseases, with particular attention given to diseases communicable to humans, such as rabies. The government introduced Diseases Survey Teams comprising veterinary officers and scientists to investigate livestock diseases, while diagnostic services were maintained to support effective control measures. For example, the eruption of Rinderpest diseases in 1923, led the British government to increase more veterinary staff in Ruaha valley.⁷ These measures included quarantine, preventive inoculations, the destruction of vectors, and appropriate treatments, applied where justified by the economics of livestock industry and on humane grounds to protect human health.⁸

Historiographically, the British colonial policy of the Livestock Department in Tanganyika has been examined from both administrative and critical perspectives.⁹ Official Colonial accounts portray these policies as progressive measures aimed at improving

¹ TNA, The Native Authority Ordinance of the 1951 Cap. 72. Section 16 of the Native Authority Ordinance. 30/11/1951. Acc. 24. File no. VI/13/II/174. Veterinary Cattle keeping 1955-1957. See also; Julius Mgya and Osmund Kapinga, "Iringa Dipping Scheme in Mufindi 1940-1958. Development' Resisted by Peasants." *EAS Journal of Humanities and Cultural Studies* 4, no.2, (2022):2663-6743. Doi: 10.36349/easjhcs.2022.v04i02.00X.

² Tanganyika Territory, Annual Report of the Department of Veterinary Science and Animal Husbandry, 1923), 5.

³ Fiona D. Mackenzie, *Land, Ecology and Resistance in Kenya, 1880-1952*. Portsmouth, NH: Heinemann, 1998) 118-123; and David Anderson, "Demography, and Drought: The Colonial State and Soil Conservation in East Africa during the 1930," *African Affairs* 83, no.332, (1984): 321-343.

⁴ Henrietta L. Moore and Megan Vaughan, *Cutting Down Trees: Gender Nutrition, and Agricultural Change in Northern Province of Zambia.1890-1990*. (London: James Currey, 1994), 87-90.

⁵ William Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock and the Environment, 1770-1950*. (Oxford: Oxford University Press, 2003), 318-325.

⁶ William Beinart and Lotte Hughes, *Environment and Empire*. (Oxford: Oxford University Press, 2007). 173-178.

⁷ Tanganyika Territory Annual report of the Department of Veterinary Science and Animal Husbandry, 1925. (Dar es Salaam. Government Printer, 1926), v.

⁸ Tanganyika Territory Annual Reports of the Department of Veterinary Science and Animal Husbandry, Volume 1. 1956. (Dar es Salaam. Government Printer, 1957), v.

⁹ Pius Mboya., "Livestock versus Cotton: A conflict in the early British Colonial Economic policy in Usukuma 1921-1950. The case study of Shinyanga District – Tanzania." (M.A. History Dissertation. University of Dar es Salaam. 1987).

animal health and increasing productivity through better nutrition, management and breeding practices.¹⁰ From this standpoint, the interventions were intended to modernise livestock production, safeguard economic interests, and enhance the efficiency of both African and settler herds.

However, critical historians such as Mwatwara argues that these policies were not purely developmental but also served broader colonial objectives. By regulating animal health, nutrition and breeding, the colonial administration exercised control over African livestock owners, directing production to meet the economic demands of the colonial state and settler enterprises.¹¹ Scholars such as Drinkwater notes that technical development policies were as much about recruiting the people into modernity as a way of gaining traditional authority over them as they were about increasing agricultural production.¹² Such policies often prioritised commercial and export-oriented goals over the traditional practices and livelihoods of African communities. Scholars such as Gilfoyle argues that government established veterinary services to protect livestock for export trade and support the native stock owners to keep their livestock healthy.¹³ Consequently, while the promotion of animal health and productivity was presented as beneficial, it also functioned as a mechanism of economic extraction, social control, and the imposition of colonial agricultural models on indigenous systems.

The establishment of livestock production policies in Iringa during the colonial period was closely connected to broader livestock policies implemented in Tanganyika as a whole. Colonial livestock policy at the territorial level sought to improve animal health, increase productivity, and integrate livestock production into the colonial economy through measures such as diseases control, regulated marketing, improved breeding, and better management practices.¹⁴ These objectives provided the framework within which district-level policies were formulated and enforced. Within this framework, the government succeeded in establishing laws to control diseases affecting indigenous cattle. The reports indicate that the District Veterinary Officer of Iringa District, in collaboration with the government, worked through the local traditional administrative to enact by-laws that ensured indigenous cattle were properly treated, remained in good health, and that their

production was regulated in accordance with the law.¹⁵ This followed the government's recognition that the large numbers of cattle in Pawaga, Idodi, Tungamalenga, Mtera, Isazi, Isimani and other areas were contributing to environmental degradation. Consequently, the District Commissioner requested Chief Sapi Mkwawa, through his sub-chiefs (Vasangila), to convene meetings in various locations to educate cattle owners on good livestock-keeping practices, veterinary treatments, and the proper use of cattle dips.

Historiographically, colonial government recognition of large cattle population in Pawaga, Idodi, Tungamalenga, Isazi, Isimani, Uhambingetu and Mtera must be understood within the broader framework of colonial environmental and economic thinking. Colonial officials acknowledged that these areas possessed large numbers of cattle, which they increasingly framed as a cause of environmental destruction, particularly soil erosion, overgrazing and land degradation. However, historians such as Mark have questioned whether environmental were the primary motivation or whether it served as a justification for deeper colonial interests.¹⁶ Most of the scholars verify that environmental and destocking policies aimed to justify the colonial interest. For instance, Raikes demonstrates that environmental destruction caused by overgrazing led to the colonial government to introduce destocking campaigns between 1930s and 1940s. These measures were accompanied by the systematic establishment of corned beef production in Kenya and Tanganyika, aimed at reducing indigenous cattle herds and integrating African livestock into the colonial beef industry.¹⁷ Arguably, the colonial government destocking campaigns as a response to environmental degradation caused by overgrazing, but these measures primarily served economic interests. By reducing indigenous cattle herds and promoting corned beef production in Kenya and Tanganyika, colonial authorities reshaped African livestock systems to supply the colonial beef industry, using environmental concerns to legitimize economic control.

The memorandum of the Pawaga Sub-chieftdom verified that there were approximately 14,000 heads of cattle watering on the north bank of the Great River and Boma within a three to four hour walk from the riverbank. The department estimated that about 5,000 heads belonged to Maasai. On the South Bank of the Kisigo there were approximately 3,500 cattle. The country between the Great Ruaha and Kisigo was uninhabited owing to the absence of

¹⁰ Tanganyika Territory Annual Reports of the Department of Veterinary Science and Animal Husbandry, Volume 1. 1956. (Dar es Salaam. Government Printer, 1957), v.

¹¹ Wesley Mwatwara, "Better Breeds? The Colonial State, Africans and the Cattle Quality Clause in Southern Rhodesia, c. 1912-1930." *Journal of Southern African Studies* 42, no.2, (2016): 333-350.

¹² Michael Drinkwater, "Technical Development and Peasant Impoverishment: Land Use Policy in Zimbabwe's Midlands Province." *Journal of Southern African Studies*, 15, no.1, (1989): 287-305.

¹³ Brown K. Gilfoyle D and (Eds)., *Healing the Herds: Diseases, Livestock Economies and the Globalisation of Veterinary Medicine*. (Athens. Ohio University Press, 2009), 228.

¹⁴ Tanganyika Territory Annual Reports of the Department of Veterinary Science and Animal Husbandry, Volume 1. 1956. (Dar es Salaam. Government Printer, 1957), v.

¹⁵ TNA, Letter from Veterinary Officer of Iringa District to District Commissioner: Iringa District Dipping Scheme Mugama detailed observation Area. Dated, 20/4/1954. Acc. 24. File; no. VI/13/II/311. Veterinary Cattle keeping, 1952-1957.

¹⁶ Cassandra Mark Thiesen, "Contestation over Agricultural Production in Colonial Africa," In *The Oxford Handbook of Agricultural History*, ed. Jeannie Whayne. (Oxford: Oxford University Press, 2024), online edition. Oxford Academic, 21, March, 2024. See also; Sandra Swart "Animal in Africa History," In *Oxford Research Encyclopedia of African History*. Retrieved 14, Dec. 2025. From <https://oxforre.com/africanhistory/view/10.1093/acrefore>

¹⁷ Phillip L. Raikes., *Livestock Development and Policy in East Africa*. (Copenhagen. Uppsalla, Centre for Development Research, 1981), 96.

water.¹⁸ Arguably, the designation of the land between the Great Ruaha and Kisigo as inhabited due to absence of water obscured the reality that colonial conservation measures themselves restricted access to grazing and watering points, thereby forcing cattle into limited zones. Consequently, overcrowding along the riverbanks was not merely an ecological problem but a direct outcome of colonial policies that controlled cattle movement under the guise of environmental conservation. This interpretation enabled the colonial state to justify increased surveillance, destocking and restrictions on pastoral mobility, while overlooking its own role in creating the environmental pressure it claimed.

The Uhehe Native Authority introduced regulations governing cattle ownership in Pawaga, Idodi, Usagala, Ismani during the colonial period. These regulations were primarily directed to the Maasai, who at the time possessed large herds of cattle and had settled in or seasonally occupied these areas. The department-imposed restrictions based on prohibiting from going further than the restricted areas. Historically, the Maasai system of pastoralism depended on mobility and extensive grazing, which often brought them into conflict with colonial administrative boundaries. Scholars argue that the traditional system of land use was transformed during the colonial period. The colonial government started controlling land for establishing cattle grazing on marginal land.¹⁹ The aim was to prevent the land from being destructive through overstocking activities. These areas might have been highly affected by climate destruction resulting from overstocking.

Here are the regulations for Pawaga, Idodi, and Usagala, which differed from other areas of the district because the natives who lived in these areas had large numbers of individual cattle presented in the area. The large group of herds implies the concentration of multiple herds of cattle in one area. The large group of herds in the lowlands of Pawaga, Idodi and Usagala indicated overstocking. This led the government to make laws to conserve the environment in these areas. The regulations imposed clear restrictions on movement, prohibiting cattle owners from driving their herds beyond designated areas. Most of the stock owners who lived in the areas were the Maasai. However, historically, these regulations also undermined Maasai pastoral practices, disrupted traditional patterns of seasonal movement, and strengthened administrative control over Africa. In this way, environmental conservation became intertwined with colonial regulations and reorganization of indigenous as follows;

First, the boundaries of grazing land were based on the main road from Mtera to the 14th PWD Camp,²⁰ to Izazi-Makula-Mondamela,

¹⁸ TNA, J.C. Clarks, Safari Reports Pawaga Sub-Chiefdom. Submitted to the Veterinary District Officer,

Acc. 24. File.VI/13/11. Veterinary Cattle keeping, 1952-1957.

¹⁹ Vivi Pietikainem., "Measures to prevent overstocking and overgrazing in woodlands. A case study in Babati, Northern Tanzania." (M.A. Dissertations. Soderton University College, 2006), 1

²⁰ PWD Camp likely referred to Camps or stations set up by the Public Works Department (PWD) along the colonial roads. The Public works Department was responsible for infrastructure development and maintenance, including roads, bridges, and other public amenities in many colonial British colonies. These camps served as the checkpoints. See for example, Frank Edward and

Holo Canyon from Kiomambwe Road in Iringa, and Great Ruaha to Mtera Bridge.²¹ This demarcation served as an administrative reference point used by the authorities to control and regulate cattle movement. Mtera is likely a landmark serving as a reference point and 14th PWD Camp was possibly a specific camp or checkpoint on the road. Izazi- Makula-Mondamela was another landmark or a route name. Holo canyon was a geographical feature, possibly a canyon. Kiomambwe Road in Iringa was a specific road in the district of Iringa. Great Ruaha, could refer to the Ruaha River or a nearby area and the Mtera Bridge was likely to cross a river or stream in the area. The first law was based on defining the boundaries of grazing land, using these geographical features and roads as markers. The use of the main road as boundary reflected historical efforts by the government to impose order, protect the environment, and manage land use through clearly defined territorial limits.

The second law permitted the grazing of cattle, goats and sheep within the reserve area, but only with the concert of the Lord Medical Officer of the bull. Historically, this colonial administration's concern with animals' health and diseases control, particularly in relation to cattle epidemics such as rinderpest, which had previously caused severe losses. By placing authority in the hands of medical officer, the government sought to regulate pastoral activity through veterinary supervision rather than through unrestricted access. For example, the cattle owners who live in pasture-bound tool the cattle out in the morning and bring them back in the evening through routes set up by the supervisors of the Veterinary Department and were prohibited from letting cows crow on the way to a locked area when leaving home and returning.²² According to the boundaries marked by the government, it seems that the stock owners were allowed to graze their cattle in designated areas. The Lord Medical Officer provided the grazing permission. The colonial authority was the overseer or regulator of the grazing activities in the area. For example, the archival sources verify that during the rains, pasture on the north side of the Izazi-Kimambwe motor road be rested to enable it to regenerate, that all cattle be brought over to the south side rate, and that all cattle be brought over to the south side of the road. For this to be effective, water supplies for the cattle would have to be made available at suitable points south of the road.²³ Arguably, this practice disrupted traditional pastoral routines by imposing fixed daily schedules, thereby reinforcing administrative oversight over indigenous livestock management while presenting these controls as measures for public and animal health.

Third, the young calves were not allowed to go far to follow the flocks. They would be allowed to be grazed somewhere in the

Mikael Hard. "Maintaining the Local Empire: The Publics works Department in Dar es Salaam." *The Journal of Transport History*, 0,0, (2019), 1-20. Doi: 1177/00225266519883457

²¹ TNA. Minutes of the sub-chief Meeting held at Kasanga on 7th August 1951. (Pawaga grazing ordinance, of the 1951). Acc. 24. File no. VI/13/II/188. Veterinary Cattle Keeping, 1952-1957.

²² Ibid.

²³ TNA, J.C. Clarks, Safari reports and Chiefdom to Pawaga. On 20th March 1939. Acc. 24. File no VI/13/11 Veterinary Cattle Keeping 1952-1957.

closed area.²⁴ This law focuses on young calves. They were not mature and likely require special care or supervision. This view is supported by scholars such as Whalison, Daniel and Keyserling who recommend that calves are to be removed from their mothers at birth, housed individually, fed restricted amounts of milk and weaned abruptly at a young age.²⁵ The colonial government restricted the movement of calves to go long distances. This restriction could be for their safety, to prevent them from straying too far from their designated areas, or to manage their grazing patterns effectively.

Fourth, it became mandatory that cereal stalks be destroyed after harvesting to feed the calves. Landowners were not permitted to collect and dry stalk of cereal plants without the permission of the lord cattle physician and the farm lord.²⁶ The law was based on controlling the use of cereal stalks after harvesting, specifically for feeding calves. This implies that there was a rule or regulation that required farmers to keep the stalks instead of disposing them off. Stalks were used as feed for young cattle, which was likely seen as beneficial or necessary for livestock management. It seems landowners were not allowed to collect and dry the stalks without permission. This shows that there were specific rules governing the collection and use of cereals stalks. The lord cattle physician and farm lord suggest that there were designated authorities or jurisdiction or authority to grant permission for the collection and use of cereal stalks. This law appears to describe a historical context where cereal stalks were regulated to be presented for feeding calves, with specific rules about their collection and use under the authority. This could reflect agricultural or customary rules from a specific historical period to a cultural context.

Fifth, veterinary department orders had to ensure equal water for livestock milking, ensuring denser, contaminated water. Locals had to repair damaged parts and clean up areas for grazing.²⁷ Arguably, the law describes the situation related to the management of livestock and environment of livestock and environmental conditions. The Veterinary Department ensured equal access to water for livestock milking. This view that a directive aimed at ensuring all livestock have fair and adequate access to water was crucial for their well-being. The Tanganyika reports show that, during the dry season, the Ruaha and Kisigo rivers were very useful for livestock grazed along the river valleys. The Kisigo River had a series of pools and were easily fordable at almost any point, and at the same time, thousands of cattle were concentrated

on the banks of these rivers for drinking water.²⁸ The presence of a large group of cattle implies more concentration and pollution. This poses a challenge as livestock might have to tolerate or cope with this compromised water quality. However, the government made efforts to separate and prepare reserves along the water sources and in swamps to supply the needs of the livestock population. For instance, the areas of Pawaga, Usangu, Idodi, and other lowland areas of Southern Highlands were adequately reserving along the water courses and in swamps to supply the needs of livestock population.²⁹

Sixth, cowboys had to ensure shepherds understood laws to avoid mistakes. Punishment had to be based on the offence, with a maximum fine for livestock owners and pastoralists, with young pastors paying for their fathers or guardians.³⁰ As regards this law, it appears that a person referred to as “cowboy” was responsible for ensuring that the shepherds understood the regulations governing their activities. Any breach of these regulations was to be treated as an offense. It seems to imply that there were penalties or consequences for breaking the laws. This shows that monetary fines were imposed as a punishment for those who did not comply with the typical regulatory practices whereas fines were imposed as a punishment for those who did not comply with the law.

Although the department gave the regulations to the Maasai who lived in Pawaga, Usagala and Idodi, this article shows that controlling the Maasai was harsh because they frequently moved to find areas with good pasture and water. The provision of boundaries and locations for pasturing for Maasai as a regulation was to be emphasized with punishments to make them obey the rules. However, the Native authorities forced the Maasai to migrate to other areas to obtain pastures for the indigenous people of Pawaga and divide them so that others may pasture their cattle in other places.³¹ The movement of Maasai from one location to another forced them to migrate to other sites. The department saw them as if they did not know the value of the land. This is the reason why the government chased them without any compensation. Scholars such as Lotte report that the Maasai community reflected and evaluated their total losses during the horrific removal by the British Imperial Regime from their lands.³² It had commonly been assumed that the Maasai representatives would work for their grievances with the government, so the laws made for them should be friendly based on environmental conservation.

²⁴ TNA. Minutes of the sub-chief Meeting held at Kasanga on 7th August 1951. (Pawaga grazing ordinance, of the 1951). Acc. 24. File no. VI/13/II/188. Veterinary Cattle Keeping, 1952-1957.

²⁵ Laura Whalin, Daniel M. Weary, Von Keyserlingk., “Understanding Behavioural Development of Calves in Natural Settings to Inform Calf Management.” *Animals* 11, no 8, (2021): 2446 -2462. [https:// doi.org/10.3390/ani11082446](https://doi.org/10.3390/ani11082446).

²⁶ TNA. Minutes of the sub-chief Meeting held at Kasanga on 7th August 1951. (Pawaga grazing ordinance, of the 1951). Acc. 24. File no. VI/13/II/188. Veterinary Cattle Keeping, 1952-1957.

²⁷ TNA. Minutes of the sub-chief Meeting held at Kasanga on 7th August 1951, (Pawaga grazing ordinance, of the 1951). Acc. 24. File no. VI/13/II/188. Veterinary Cattle Keeping, 1952-1957.

²⁸ Tanganyika territory Annual report of the Department of veterinary Science and Animal husbandry, 1937. (Dar es Salaam. Government printer, 1938), 9.

²⁹ Tanganyika territory Annual report of the Department of veterinary Science and Animal husbandry, Volume I. 1958. (Dar es Salaam. Government printer, 1958), 16.

³⁰ TNA. Minutes of the sub-chief Meeting held at Kasanga on 7th August 1951. (Pawaga grazing ordinance, of the 1951). Acc. 24. File no. VI/13/II/188. Veterinary Cattle Keeping, 1952-1957.

³¹ TNA, Minutes of the District Council meeting held on 13th -14th August 1951. Acc. 24. File no. 42/51/192. Native Affairs, 1933-1953.

³² Hughes Lotte., *Moving the Maasai: A Colonial Misadventure*. (UK. Palgrave Macmillan, 2006), 192.

Moreover, the Native Authority of Pawaga prohibited the movement of the Maasai with their cattle. The Maasai had to remain in restricted areas for their grazing. The aim was to prevent soil erosion that occurred every year. The native authority prohibited the Maasai, who lived in Pawaga, the West of the motor road, and south of the Great Ruaha River from migrating between the Great Ruaha and Kisigo River, which were inhabited.³³ Environmental control seemed necessary, especially when prohibiting many cattle from grazing at a particular place might cause soil erosion. The department denied the Maasai of movement that appeared to them as introducing laws and regulations which seemed to be new to the Maasai. The migration of the Maasai was part and parcel of their cultural practices. Prohibiting them from moving appeared to be forcing them to obey government laws and control their livestock diseases through orders and regulations of the veterinary officials.

From environmental determinist perspective, colonial administrators argued that African pastoral practices were irrational and ecologically destructive. Such interpretation portrayed indigenous livestock owners as irresponsible custodians of the land, thereby legitimising state intervention in pastoral production. Measures aimed at controlling livestock diseases, such as tick-borne illnesses, together with the introduction of cattle dips, were presented as scientific and progressive initiatives designed to improve animal health and safeguard the environment. The reports indicate that, following the establishment of control, the reclamation and management of pasture were regarded as central to the essential first step in the improvement of the agricultural environment, without which no significant progress could be achieved in the breeding of superior classes of livestock or in the enhancement of their productive capacity.³⁴

Notwithstanding the strong articulation of the African perspective, the main thrust of this article is to demonstrate that the Mwatwara model downplays the fact that colonial veterinary policy was often coercive and rooted in an ideology of European superiority.³⁵ While dips were ostensibly introduced to control diseases, their compulsory use, enforced through punishment, reveals a deeper agenda. Livestock ordinances were selectively applied to force African cattle owners into compliance, and failure to dip animals or observe diseases control regulations often resulted in fines, confiscation or compulsory sale of cattle.³⁶ In this way, environmental conservation and veterinary control became tools for extracting cattle from indigenous communities. Scholars such

as Waller adds that veterinary policies were used to manage diseases by force, which primary aimed to protect white settler herds.³⁷ Arguably, colonial veterinary policies were less concerned with neutral diseases control than with the protection of White settler livestock interests. Although officially justified as scientific and progressive measures to improve animal health and environmental management, these policies were frequently enforced through coercive means and disproportionately targeted African livestock owners. As scholars such as Waller have noted, veterinary intervention functioned as instruments of control that reinforced racial and economic inequalities by privileging settler herders while marginalizing indigenous livestock systems.

Marxist and political economy interpretations further argue that the colonial state exploited environmental discourse to facilitate economic extraction.³⁸ Reducing cattle population in the Iringa District, was not solely about environmental protection but also about redirecting African wealth into colonial markets. For instance, reports indicate that in 1934, slaughtered in Iringa supplied meat primarily to areas inhabited by settlers, particularly to tea estates and urban centres. For example, meat was distributed to Njombe, Lupembe, Malangali, Mufindi and Mbeya, while additional supplies were directed to labourers employed in tea and wattle processing industries in Kibena and Njombe.³⁹ However, it can be argued that supplying meat to urban centres and labour camps, undermined indigenous economic independence. The enforcement of livestock laws therefore functioned as a mechanism of accumulation rather than conservation.

Iringa District Dipping Scheme Regulations

The veterinary officers drafted rules and regulations from the Governor's proposed Regulations and prepared the District Commissioner Committee and Chief Sapi Mkwawa to discuss the Governor's proposed regulations. What is notable about this is that the senior Provincial Commissioner of Mbeya had to follow up emphasis to empower the Native courts to take cases concerning Africans under these rules.⁴⁰ This case has shown that introducing compulsory dipping and measures to a backward native population was not accessible. The government had to make more effort to force the cattle owners to use dipping or spraying as the ultimate control of ECF. The aim of constructing dips in different places was to reduce the tick population so that the land becomes clean because insufficient ticks are left to carry on diseases.

³³ TNA, Veterinary Officer Iringa to Pawaga Sub chiefs. Memorandum to Pawaga Sub-

Chiefs with Regard to Soil erosion. Acc. 24. File no. VI/13/II/374. Veterinary Cattle Keeping, 1955-1957.

³⁴ Tanganyika Territory Annual Reports of the Department of Veterinary science and Animal Husbandry, 1940. (Dar es Salaam. Government Printer, 1941), 4.

³⁵ Wesley Mwatwara, "A History of State Veterinary Services and African Livestock Regimes in Colonial Zimbabwe, c. 1896-1980." (PhD Dissertation, Stellenbosch University, 2014),12.

³⁶ TNA, Letter from Provincial Commissioner enclosed with Regulations under the Animal Diseases Ordinances to District Veterinary Officer of Iringa District. Dated 16th, January 1952. Acc.24. File no. VI/13/169. Veterinary Cattle keeping, 1952-1957.

³⁷ Richard Waller, "Clean 'and 'Dity': Cattle Diseases and Control Policy in Colonia Kenya, 1900-1940." *The Journal of African History* 45, no.1, (2004):45-80. Doi: 10.1017/s0021853703008508.

³⁸ Tingting Ge. "Marxist Political Economy and Its Implications for Domestic Economic development." *International Journal of Philosophy of Culture and Axiology* 21, no.1, (2024): 550-575.

³⁹ Tanganyika Territory Annual Report of the Department of Veterinary science and animal husbandry, 1934. (Dar es Salaam. Government Printer, 1935), 30.

⁴⁰ TNA, The senior Provincial Commissioner, Mbeya to Veterinary officer southern Province; Draft of Regulations under the Animal Diseases Ordinances with regard to the Compulsory Dipping scheme.16th January 1952. Acc. 24. File no. VI/13/II/169. Veterinary Cattle Keeping, 1952-1957.

The Native Authority Ordinance Cap. 72 allowed the Native Authority Committee under the District Commissioner to prepare the Native Ordinance Rules. The Iringa District Dipping Scheme Regulations of the year 1951, as produced by the Native Authority, in the exercise of the powers conferred upon Native Authorities by Section 16 of the Native Authority Ordinance, and with the approval of the Governor, made rules in 1951, which stated:

1. These rules may be cited as The Native Authority (Uhehe Native Authority) cattle Dipping Rules, 1951.
2. These rules shall apply to the entire Iringa District, less the Sub-Chiefdoms of Idodi, Pawaga and Usagara.⁴¹

These regulations reflected a wider colonial approach to livestock diseases control that was also evident in other British Colonial territories. By formally naming the *Native Authority (Uhehe Native Authority) Cattle Dipping Rules, 1951*, the ordinance followed a pattern seen in colonies such as Kenya and Zimbabwe, where local or native authorities were empowered to administer cattle dipping schemes under central supervision. Such naming helped to define jurisdiction and responsibility, promoting administrative order and providing a legal basis for enforcing veterinary measures aimed at controlling tick-borne diseases.⁴² The approach indicated an early recognition that effective livestock management required legally defined authority at the local level.

However, studies of cattle dipping in Kenya and India show that excluding certain areas from diseases control regimes often undermined wider animal health objectives, particularly where livestock movement was common.⁴³ By excluding Idodi, Pawaga and Usagara, the Iringa regulations created regulatory gaps that made enforcement inconsistent between the two areas and across boundaries.

Other regulations were;

3. All cattle within the area to which these rules apply and which are old enough to walk to the dip must be dipped once each week at the place ordered by the Veterinary Officer in charge of cattle dipping.
4. The cattle in each herd must be brought to the Dip by herdsmen sufficient to drive them properly through the dip, and these herdsmen must obey all legal orders given by the Veterinary Staff in charge of the dip all such assistant as may be necessary for these purposes.
5. All cattle owners shall declare fully all such details of their herds, cattle enclosures, grazing grounds, and give any such other information to the Veterinary Officer in charge of cattle dipping or to those appointed by him

⁴¹ TNA, The Native Authority Ordinance of the 1951 Cap. 72. Section 16 of the Native Authority Ordinance. 30/11/1951. Acc. 24. File no. VI/13/II/174. Veterinary Cattle keeping 1955-1957.

⁴² David Anderson, *Eroding the Commons: The Politics of Ecology in Baringo, Kenya 1890-1963*. (Oxford: James Currey, 2002), 146-148.

⁴³ K.J. Field, "Veterinary Policy and Livestock Diseases Control in colonial India." *Journal of Imperial and Commonwealth History* 18, no.2 (1990): 241-243.

under rule '3' as may be necessary for the purpose of counting and recording their cattle.⁴⁴

The rules on compulsory weekly dipping, obedience to veterinary staff, and full disclosure by cattle owners reflected contemporary veterinary thinking on diseases prevention in colonial Africa. Weekly dipping of all cattle old enough to walk aimed to control tick-borne diseases such as East Coast fever, which posed a serious threat to pastoral economies. Similar measures were implemented in other parts of Tanganyika and in Southern Africa, where regular dipping under veterinary supervision was considered essential for safeguarding herd health and protecting wider regional livestock markets.⁴⁵ Requiring sufficient herdsmen and cooperation with veterinary officers further strengthened administrative control, while compulsory disclosure of herd details enabled more accurate record keeping and surveillance, practices that were also encouraged in areas such as Sukumaland and Zimbabwe to improve diseases monitoring and planning.⁴⁶

Despite these interventions, the rules had significant weaknesses in practice. Weekly compulsory dipping placed heavy labour demands on pastoralists and often ignored seasonal movements, distance to dips, and local grazing pattern, leading to resistance and non-compliance. For example, resistance to compulsory dipping contained anti-hegemonic ideological motives that led to individual or collective sacrifice to bring changes about the regulations or rules for the beneficial goals. The underground resistance and grievances on cattle dipping were raised to the public interest when the Tanganyika African National Union Party (TANU) campaigned for national independence. Mr. Modestus Choga,⁴⁷ a member of TANU, used dipping grievances as an opportunity to lead a campaign against cattle dipping in the Iringa District.⁴⁸ Evidence from Iringa District was similar to that from other parts of Tanganyika and South Africa, showing that rigid enforcement without regard to pastoral realities frequently undermined cooperation and reduced effectiveness.⁴⁹ Moreover, the requirement for full disclosure of herd information assumed a level of trust and administrative capacity that did not always exist, resulting in incomplete records and evasion. The heavy reliance on coercion, rather than incentives or education, limited the success of these measures, a problem widely observed in colonial veterinary

⁴⁴ TNA, The Native Authority Ordinance of the 1951 Cap. 72. Section 16 of the Native Authority Ordinance. 30/11/1951. Acc. 24. File no. VI/13/II/174. Veterinary Cattle keeping 1955-1957.

⁴⁵ John Illife, *A Modern History of Tanganyika*. (Cambridge: Cambridge University Press, 1979), 318.

⁴⁶ Juhan Koponem, *Development for Exploitation: German Colonial Policies in Mainland Tanzania, 1884-1914*. (Helsinki: Finnish Historical Society, 1994), 412-414.

⁴⁷ Branwyn Poleykett and Peter Mangesho., "Labour Politics and Africanization at a Tanzanian Scientific Research Institute, 1949-66." *Journal of the International African Institute*, 86.1. (2016), 142-161.

⁴⁸ Ibid,

⁴⁹ Willam Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950*. (Oxford: Oxford University Press, 2003), 284-286.

policies across Africa and one that later reforms sought to address through broader and more flexible legislation.⁵⁰

6. "All cattle owners shall declare fully to the Veterinary Staff in charge of the dip at which their herds, including births, deaths, sales gifts, losses, thefts or changes of locations of cattle enclosures, of persons in charge, such declaration to be made on the next dipping day of the herd after the change has taken place."
7. "Any cattle entering the area to which those rules apply must be dipped immediately in the dip nearest to their point of entry of the area, and thereafter once each duty of the owner of such cattle or his agent to ensure that dates and places of dipping are endorsed on the back of the relevant movement permit by the Veterinary Staff in charge of the dip concerned."
8. "It shall be the duty of every person purchasing cattle at a cattle market in the area to which these rules apply, for any person to be in possession of, to herd, drive own or have any right or title in any cattle which cannot be shown to the satisfaction of the Veterinary Officer in charge."⁵¹

Using Historiographical approach, the dipping laws and regulations in Iringa District can be interpreted as part of a longer intellectual and administrative tradition rooted in colonial veterinary thinking in East Africa. Colonial era scholars and veterinary officers consistently framed compulsory dipping as a rational, scientific solution to livestock diseases, particularly after the rinderpest epizootic and the spread of East Coast fever in the early twentieth century. Historians such as Mwatwara and Karen Brown argue that dipping regulations were not merely technical measures but instruments of state control, designed to make African livestock keeping legible to colonial administrations through records, inspections and movement.⁵² Studies from Kenya and South Africa show that compulsory dipping frequently failed when infrastructure was weak, dips were poorly maintained, or veterinary staff were insufficient, despite the apparent strictness of the law.⁵³ Applying this interpretive lens to Iringa, the heavy reporting obligations and reliance on veterinary endorsement appear vulnerable to the same structural problems identified in colonial regulations that prioritized control over collaboration.

Historiographically, therefore, the Iringa regulations can be seen not simply as flawed local rules, but as inheritors of a regulatory tradition whose weaknesses administrative rigidity, social detachment and enforcement gaps, have been repeatedly

documented across the British East, Central and Southern African livestock histories. For instance, in Zimbabwe, Mwatwara argues that in line with settlers' self-declared, 'civilizing' efforts, the first veterinary measure to be taken in the 1890s was the publication in December 1891 of a regulation in connection with lung sickness and the appointment of the inspector of cattle.⁵⁴ Close connections with Iringa District were learned on legislatively as most of the regulations applied during the establishment of Dipping scheme in Iringa District, were derived from the Cape particularly the Animal Diseases Act (1881), which made provision for the isolation of livestock suffering from contagious and infectious diseases.⁵⁵

9. "It shall be an offence in the area to which these rules apply, for and person to be in possession of, to herd, drive, own or have any right or title in any cattle which cannot be shown to the satisfaction of the Veterinary Officer in charge of cattle dipping or those appointed by him under rule no. 3 to have been dipped within the preceding week."
10. "All herdsman or cattle owners bringing cattle to the dip may be required by the Veterinary Staff in charge of the dip to give such assistance as may be necessary in the work of topping upon the dip or at any other time in the work of emptying, cleaning and refilling the dip. Or of maintaining the approach road to the dip of carrying out anti-soil erosion measures at the dip site."
11. A fee shall be levied in such manner and at such rates as may be down from time to time by Native Authority on all cattle to which these rules shall apply."
12. Any offences against these rules shall render the person committing such offences liable to a fine of shs. 200/= or imprisonment for a period not exceeding six months or to confiscation of the cattle concerned, or to a combination of such penalties."⁵⁶

These regulations were formally signed and authorised by the District Commissioner, Mr. T. M. Skinner, reinforcing their status as instruments of colonial administrative authority. These rules were applied to the entire Iringa District, excluding the sub-chiefs of Idodi, Pawaga, and Usagara. The process within which these rules are applied might be made in writing by the Native authority from time to time as might be expedient on the advice of the veterinary officer in charge of cattle.

The Native Authority Ordinances prepared by the Committee of the District Commissioner in 1951 were not properly applied because they lacked effective enforcement mechanisms and clear

⁵⁰ Helen Tilley, *Africa as a Living Laboratory. Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*. (Chicago: University of Chicago Press, 2011), 233-235.

⁵¹ TNA, The Native Authority Ordinance of the 1951 Cap. 72. Section 16 of the Native Authority Ordinance. 30/11/1951. Acc. 24. File no. VI/13/II/174. Veterinary Cattle keeping 1955-1957.

⁵² Wesley Mwatwara "Even the Calves Must Dip." East Cost Fever, Africans and the Imposition of Dipping Tanks in southern Rhodesia, c. 1902-1930." *South African Journal Historical Journal* 66, no.4. (2014), 590-611.

⁵³ William Beinart, "The Political Economy of Pondoland 1860-1930." *African Studies* 39, no.2 (1980): 153-176.

⁵⁴ Wesley Mwatwara, "If our Cattle die, we eat them but these white people bury and burn them! African Livestock Regimes, Veterinary Knowledge and the Emergence of a Colonial Order in Southern Rhodesia, c. 1860-1802. *Kronos*, 41, no.1 (2015): 112-141.

⁵⁵ D. A. Lawrence, "The History of Veterinary Services in Rhodesia: Earliest development, 1890 to 1899." *Rhodesia Veterinary Journal*, 1, no 2 (1970), 30.

⁵⁶ TNA, The Native Authority Ordinance of the 1951 Cap. 72. Section 16 of the Native Authority Ordinance. 30/11/1951. Acc. 24. File no. VI/13/II/174. Veterinary Cattle keeping 1955-1957.

controls over cattle movement. Although the regulations required all cattle old enough to walk to be dipped weekly at designated sites, they did not include provisions to regulate or restrict the movement of cattle into or through dipping areas. As a result, cattle could be moved freely without inspection, increasing the risk of spreading animal diseases. This weakness showed that the 1951 rules were insufficient for ensuring proper cattle management and disease control, particularly in areas, where compliance depended largely on voluntary cooperation rather than strict supervision.

Due to these shortcomings, the inadequately applied 1951 ordinances led to the establishment of New Animal Diseases Ordinances, Cap. 156, Regulations made by Governor in Council under Section 25 of the Animal Diseases Ordinance. As they were known as “*The Animal Diseases Amendment Regulations, 1952.*”⁵⁷ These regulations were stricter and more practical rules. One important addition was the requirement that no cattle could be moved into or through a compulsory dipping area without a permit issued and signed by an inspector, a rule that did not exist in the 1951 regulations. This new provision strengthened disease prevention by ensuring official oversight of cattle movement and improving accountability. Consequently, the replacement of 1951 rules with the new ordinance reflected the need for more comprehensive and enforceable regulations to achieve effective cattle management and control animal diseases.

The following regulations of 1952, are outlined below to demonstrate the new measures introduced to strengthen the control and management of animal diseases

1. These regulations may be cited as the Animal Diseases (Amendment) Regulations, 1952.
2. Regulations 29 of the Animal Diseases Regulations in hereby revoked and replaced the following; -
 - i) No cattle may be moved into or through a compulsory dipping area unless accompanied by a permit issued and signed by an Inspector.
 - ii) Every person in charge of cattle moving into compulsory dipping area shall, within 24 hours of arrival with in such area, report to an Inspector such particulars regarding the cattle in his charge as the Inspector may require of him for the purpose of arranging the dipping or spraying of such cattle.
 - iii) Save as here in after provided, the owner or possessor of any cattle in, or moving into a compulsory dipping area shall =, at such hours on such dates and an such intervals as may from time to time be ordered by notice in writing by him in that behalf;
 - a) Dip all cattle in his possession within such area by immersion in such cattle dipping tank as may be specified in the order or
 - b) Spray all cattle in his possession within such area using such apparatus as may be specific in the order.⁵⁸

Historically, regulations governing cattle movement and compulsory dipping were not neutral animal health measures but

instruments through which colonial and post-colonial states extended control over African livestock owners. The rule that ‘No cattle may be moved into or through a compulsory area without a permit signed by Inspector emerged direct from colonial veterinary polices established in South Africa. Historians argue that the colonial authorities framed movement permits as essential for diseases preventions, historians demonstrate that they functioned primarily as technologies of surveillance, restricting pastoral mobility and subjecting livestock economies to bureaucratic approval.⁵⁹ For instance in Iringa District, during the quarantine time, cattle owners ought to obtain official permits from the Veterinary Officer of Itheme stock Farm, for all movements and exchanges of cattle, whether within, into or out of the Dipping areas.⁶⁰ By criminalising movement without official authorisation, these regulations disrupted seasonal grazing systems and market access, exposing livestock owners to fines, confiscation of cattle and prosecution. The permit system therefore institutionalized exploitation by shifting the economic costs of diseases control delays, transport, fees and lost trade onto livestock owners, while consolidating state power over rural production.⁶¹

The requirements that cattle owners report to an inspector within 24 hours of entering a compulsory dipping area further deepened this structure of suppression. Colonial veterinary regimes assumed rapid reporting and compliance, despite chronic shortages of inspectors, long distances and poor infrastructure in rural areas.⁶² Historiography studies reveals that failure to report on time, even when unavoidable, was treated as wilful defiance, legitimizing punitive enforcement. Inspectors’ authority over dipping schedules, permits and market access, often compelling unpaid labour for dip maintenance and enforcing compliance through coercion.⁶³ In this context, compulsory reporting intensified unequal power relations by placing livestock owners in a position of permanent vulnerability to state sanctions. For example, the government Notice no. 94 of the 1950, authorised the making of orders by Native Authorities for the purposes of taking a livestock census within their respective Areas. Sanctions were to be made by the Native authorities throughout the Tanganyika Territory to make orders to that description.⁶⁴ Viewed together, these regulations illustrate a continuity in livestock governance

⁵⁹ Mwatwara, “Even the Calves Must Dip” 590-611.

⁶⁰ Tanganyika Territory Annual Report of the Department of Veterinary science and Animal Husbandry, Volume two, 1955. (Dar s Salaam. Government Printer, 1957), 52.

⁶¹ Miriam Murei, Samwel A. Nyancho, and Melvine C. Lilechi, “Impact of Colonialism on the Indigenous Farming Practices of Nandi People in Kenya, 1895-1963.” *African Research Journal of Education and social Sciences* 7, no. 3 (2020): 9-20.

⁶² David Anderson, “Depression, Dust Bowl, Demography and Drought: The Colonial State and Soil Conservation in East Africa during the 1930s.” *African Affairs* 83, no. 332. (1984): 321-343.

⁶³ Karen Brown, *Mad Dogs and Meerkats: A History of Resurgent Rabies in southern Africa*. (Athens: Ohio University Press, 2011), 42-47.

⁶⁴ TNA, Letter from R. De Z. Hall, Secretary; Member for Local Government, to all Provincial Commissioners: Member’s Circular Letter No. 12 of 1950. Dated 25/5/1950. Ref File No. 178: VI/12/56, Veterinary Cattle Census, 1947-1954.

⁵⁷ TNA, The Animal Diseases Ordinances (Cap.156) Regulations. Ref. File no. VI/13/II/189. Veterinary Cattle Keeping, 1952-1957.

⁵⁸ Ibid.

whereby diseases control served as justification. Historically, compulsory permits and reporting requirements did not merely protect animal health, they entrenched systems of suppression and exploiting that subordinate livestock owners' knowledge, mobility and economic autonomy to bureaucratic authority.

- iv) In any such area an Inspector shall have power to inspect and count any cattle at any time and to take samples from the contents of any dipping tank, or from any fluid possessor of any cattle to produce all cattle in his possession or under his control for the purpose of inspection of enumeration.
- v) The Director of Veterinary Services or any person authorised by him in that behalf may, by notice in writing, exempt any landowner or the owner or possessor of any cattle from any of provisions of this regulation.
- vi) Every landowner in a compulsory dipping area on whose land cattle are kept shall construct and maintain such number of cattle dipping tanks or shall obtain such spraying apparatus as the Veterinary Officer in charge of the area in which the land is stipulated may, by written notice, require of him for the purpose of spraying the cattle kept on his land and shall use for dipping or spraying the said agents of such nature and quantities as the said officer may, by such notice, instruct.⁶⁵

Historically, the powers granted to inspectors to enter land at any time, inspect and count cattle, and take samples from dipping tanks or animals exemplify the coercive reach of colonial veterinary authority. Rule (iv) reflects a regulatory tradition in which African livestock owners were subjected to constant surveillance, justified through the language of scientific diseases control. In colonial Tanganyika, Kenya and Zimbabwe, inspectors exercised sweeping discretionary powers to inspect herds, enforce compliance and punish deviations from regulations.⁶⁶ Historians argue that such authority eroded customary property rights and transformed cattle ownership into a conditional privilege overseen by the state.⁶⁷ The requirements to produce all cattle for inspection or enumeration disrupted daily labour, grazing routines and market participation, effectively subordinating livestock owners' time and autonomy to bureaucratic demands. In practice, inspection regimes enabled harassment and selective enforcement, reinforcing unequal power relations between veterinary officials and African cattle keepers under the guise of public animal health.⁶⁸

Rule (v), which allows the Director of Veterinary Services or his delegates to exempt any landowner from the regulations, further

exposes the exploitative character of the system. Historically, exemption clauses created unequal application of the law, favoring European settlers, large scale ranches or politically connected elites, while African smallholders remained subject to strict enforcement.⁶⁹ Scholars note that such discretionary exemptions undermined claims of neutrality and scientific objectivity, revealing how veterinary regulations were embedded within racialised and class-based hierarchies of colonial governance.⁷⁰ By enabling selective relief from costly and labour intensive obligations, the regulation institutionalised inequality, deepening the economic vulnerability of ordinary livestock owners who lacked access to administrative favour.

Rule (vi), which compels landowners to construct and maintain dipping tanks or acquire spraying apparatus at their own expense, most clearly demonstrates the exploitative economic logic of compulsory dipping regimes. Colonial administrations routinely transferred the financial burden of diseases control onto African livestock owners, requiring them to supply labour, materials and maintenance for dipping infrastructure without state compensation.⁷¹ Historians show that compulsory dip construction often amounted to forced labour, diverting household resources from food production and trade while serving state veterinary objectives.⁷² The obligation to comply with written instructions from veterinary officers further entrenched dependency and loss of control over land use. Taken together, these regulations reveal a historical pattern in which veterinary law functioned less as a partnership in animal health and more as a system of suppression and extraction, consolidating state authority while exploiting the labour, resources and autonomy of livestock owners.

- vii) Every such landowner, having in response to noticer under sub-regulation (6) constructed a dipping tank or obtained spraying apparatus, shall keep a true and correct register which shall be available for inspection by any inspection and shall contain.
 - a) The names and particulars of all owner of cattle kept on such land.
 - b) The number of cattle on such land owned by each cattle owner,
 - c) The number of cattle belonging to each owner dipped on each dipping day or sprayed on each cattle owner dipped on each dipping day or sprayed on each spraying day. Provided that nothing in these regulations shall be deemed prohibit the use of one or more dipping tanks of of one or more sets of spraying apparatus by

⁶⁵ TNA, The Animal Diseases Ordinances (Cap.156) Regulations. Ref. File no. VI/13/II/189. Veterinary Cattle Keeping, 1952-1957.

⁶⁶ Philip L. Raikes, *Livestock Development and Policy in East Africa*. (Uppsala: Scandinavian Institute of African Studies, 1981),64.

⁶⁷ Ibid, 39.

⁶⁸ William Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock and the Environment 1770-1950*. (Oxford: Oxford University Press, 2003), 205-214.

⁶⁹ David Anderson, "Depression, Dust Bowl, Demography and Drought: The Colonial State and Soil Conservation in East African during the 1930s," 321-343.

⁷⁰ Pnina Werbner, *The Making of an African Working Class. Politis, Law and Cultural Protest on the Manual Workers Union of Botswana*. (UK. London. Pluto Press, Archway Road, 2014), 220.

⁷¹ Philip L. Raikes, *Livestock Development and Policy in East Africa*.109.

⁷² Karen Brown, *Mad Dogs and Meerkats: A History of Resurgent Rabies in Southern Africa*. 42-48.

two or more cattle owners in common, with the approval of Veterinary Officer.⁷³

The requirements set out in regulation (vii) demonstrate the strength of colonial dipping laws as instruments of suppressions, extending state authority deep into everyday administration of African livestock keeping. By obliging landowners to maintain detailed registers listing the names of cattle owners, herd sizes and attendance at each dipping day, the regulation transformed dipping tanks into sites of permanent surveillance. Similar record keeping requirements were imposed in colonial Zimbabwe and Kenya, where historians have shown that veterinary registers enabled the state to monitor African production, identify defaulters and enforce compliance through fines of confiscation.⁷⁴ The obligation to make such records continuously available for inspection strengthened the coercive reach of inspectors, who could enter land at will and verify compliance without consent. In this way, the regulation did not merely regulate cattle health; it systematically subordinated African livestock owners to bureaucratic scrutiny, eroding customary autonomy and placing herd management under state supervision.

At the same time, the regulation reinforced economic exploitation by transferring the costs and labour of administration onto African livestock owners while reserving ultimate authority for the colonial state. The maintenance of registers, attendance at inspections and compulsory participation in dipping days consumed time and resources that might otherwise have supported subsistence or market activity. Comparative studies from South Africa and Zimbabwe show that African cattle owners were often compelled to provide unpaid labour for dip management and record-keeping, even though the benefits of diseases control were closely tied to settler and colonial commercial interests.⁷⁵ Although the regulations allowed for shared use of dipping tanks with official approval, this concession did not diminish state dominance, rather, it reinforced dependency on veterinary officers, whose permission was required for collective arrangements. Historically, such provisions strengthened hierarchical control while masking coercion behind the language of cooperation. As in other colonial contexts, the Iringa regulations reveal how veterinary law functioned as a powerful mechanism of oppression, enforcing obedience, extracting labour and knowledge, and embedding exploitation within the routines administration of cattle dipping.

- viii) If cattle other than those of such landowner and dipped or sprayed in his dip or with his spraying apparatus, such as landowner may charge the owner of such cattle such fee for dipping or spraying as may be prescribed in that behalf under these regulations and such fees may be received as a civil debt.

- ix) Where in any compulsory dipping are public dipping tanks have been established or public spraying apparatus is available, it shall be lawful for the Director of Veterinary Services or any person authorized by him in that behalf to order by notice in writing, the owner or possessor of any cattle to dip or spray all cattle in his possession within such area in such public dipping tank or with such spraying apparatus as may be specified in the notice in charge for such dipping or spraying such fees as may be prescribed there for in therefor in these regulations.
- x) For the purpose of this, "landowner" means the owner of any registered freehold land or of refusing, neglecting or failing to comply with the terms of any regulation shall be guilty of any offense.⁷⁶

The provisions contained in regulations (viii) and (ix) further demonstrate the strength of colonial dipping laws as instruments of suppression and economic exploitation of African livestock owners. Regulations (viii), which allowed landowners to charge prescribed fees when other people's cattle were dipped or sprayed in their facilities and to recover such fees as a civil debt, embedded coercion within everyday livestock relations. Africans' cattle owners, with non-attendance punished through fines, forced labour or confiscation of cattle. For example, rule (xii) demanded any offences against these rules shall render the person committing such offences liable to a fine of 200/= shillings or imprisonment for a period of not exceeding six months or to confiscation of the cattle concerned, or to a combination of such penalties.⁷⁷

In Iringa the charging of dipping fees operated under a dual system that differentiated between natives and non-natives. With regard to non-natives, it was agreed that the Veterinary Officer in charge was responsible for supplying a list of those whose cattle were required to be dipped. Under the existing system, demands for payment were made to non-natives by dipping fee clerks. In case of dispute failure to pay, the matter was reported by the supervisor to the District Commissioner, who would then intervene where necessary by instructing the Revenue Officer to institute legal proceedings. However, this procedure was rarely enforced in practice, allowing non-natives to evade payment without punishment. In light of the Main Administrative Native Rules, letter No. 18625/641 of the 14th, May 1953, which stated that the Veterinary Department was responsible for the assessment of fees, it was agreed that consideration should be given to changing the system.⁷⁸ The proposed arrangement would require the veterinary officer to assess the amount payable by non-natives and issue a formal demand note through the Revenue Office. Such a method would

⁷³ TNA, The Animal Diseases Ordinances (Cap.156) Regulations. Acc. 24. Ref. File no. VI/13/II/189. Veterinary Cattle Keeping, 1952-1957.

⁷⁴ Mwatwara, "A History of State Veterinary Services and African Livestock Regimes in Colonial Zimbabwe, 12.

⁷⁵ Walter Chambati, "Changing Agrarian Labour Relations after Land Reform in Zimbabwe." In *Land and Agrarian Reform in Zimbabwe Beyond White-Settler Capitalism*. Edited by Sam Moyo Walter Chambati. (Zimbabwe, Harare. African Institute for Agrarian Studies, 2013), 157-194.

⁷⁶ TNA, The Animal Diseases Ordinances (Cap.156) Regulations. Ref. File no. VI/13/II/189. Veterinary Cattle Keeping, 1952-1957.

⁷⁷ TNA, The Native Authority Ordinance of the 1951 Cap. 72. Section 16 of the Native Authority Ordinance. 30/11/1951. Acc. 24. File no. VI/13/II/174. Veterinary Cattle keeping 1955-1957.

⁷⁸ TNA, Note on meeting to discuss the functioning of Iringa Dipping Scheme in the District Office Iringa at 11.AM on 30th, March, 1955. Acc. 24. File VI/13/366. Veterinary Cattle Keeping, 1952-1957.

likely be more satisfactory, as it would promote greater consistency and accountability in the collection of dipping fees.⁷⁹

The system of charging dipping fees in Iringa operated in a clearly unequal manner between Africans and settlers. While Africans were subjected to strict enforcement under Native Administrative Rules, settlers who failed to pay dipping fees were not treated with the same severity. Although procedures existed for demanding payment from non-natives through dipping fee clerks and, if necessary, referral to the District Commissioner, these measures were rarely enforced in practice. Non-payment by settlers did not result in immediate punishment, prosecution, or penalties, in sharp contrast to Africans who were routinely penalized for similar failures. This disparity demonstrates that the dipping fee system was not applied uniformly but instead favored non-natives, reflecting an administrative bias that undermined fairness and equality before the law. The proposed shift to having veterinary officers directly assess and issue demand notes to non-natives further indicates acknowledgement of weakness in enforcement, yet it did not address the fundamental inequality in accountability between the two groups.

Therefore, the dipping fee system in Iringa treated natives and non-natives unequally. Enforcement against non-natives was weak, allowing them to avoid payment without punishment, unlike natives who faced strict enforcement. Although reforms were proposed to improve administration, they did not address the underlying inequality in the system.

Livestock Owners' Negotiation, Contestation, and Compliance with Veterinary Regulations

There was little emphasis on providing appropriate dipping facilities for African livestock owners between the 1920s and the 1940s. As a result, the limited number of dips constructed in the district meant that veterinary officials were not familiar with the various livestock diseases affecting different areas. Reports indicate that most available data date from the 1950s, with only few records from the 1930s and 1940s, suggesting that the veterinary department failed to implement effective services in Iringa District during the 1930s. Instead, greater attention was given to livestock censuses aimed at identifying areas with high cattle populations.⁸⁰ In this context, during the 1930s and 1940s, Chief Adam Mkwawa worked in collaboration with the colonial administration to survey and locate areas with the highest concentrations of cattle in order to determine where services such as roads and dipping facilities should be introduced.⁸¹ This approach delayed the development of veterinary infrastructure but was intended to support future diseases control measures, particularly against tick borne diseases. Although livestock censuses were important for planning, the excessive focus on data

collection delayed practical interventions needed to control widespread animal diseases. The failure to construct sufficient dipping tanks during the 1930s, and to deploy trained veterinary personnel meant that livestock owners continued to suffer losses from tick-borne diseases. This situation suggests that colonial authorities prioritised long term administrative planning over the immediate welfare of African livestock owners.

This earlier neglect partly explains the colonial government's later shift in strategy during the 1950s, when film shows were introduced as an educational tool to instruct African livestock owners on the use of dipping tanks. During the period of Sapi Mkwawa's leadership in the 1950s, these methods were expanded to include film shows and pamphlets aimed at educating Africans about the importance of cattle dipping as a measure for diseases control. The reports show that Mr. A.V. M William had to be available and was responsible for a commentary in the Hehe language, if not for the whole period, Veterinary Guard Ahmed Shariff might be available.⁸² As a result most of the livestock owners who attended the films changed their attitudes and accepted the colonial methods of livestock keeping.

As meetings and films continued in providing education, initially, many livestock owners accepted the dipping programme, as it was presented primarily as a method for washing cattle and improving their health. Local chiefs and headmen in various areas were encouraged to supervise implementation, report changes in livestock conditions within their jurisdictions, and continue persuading cattle owners to comply with the new livestock regulations. For example, areas such as Kalenga, Mlolo, Itamba, Kiwere, Rundamatwe, Mazombe, Image, Mgongo, Ismani and Nduli were effectively in persuading many livestock owners to accept the new livestock management practices. These visual demonstrations helped to reinforce official messages about improved cattle care, diseases control, and productivity, thereby encouraging wider compliance with the new system of livestock keeping.⁸³

The response to dipping had been a more complicated affair. The introduction of regulations and laws to reduce ticks through dipping reflected the reactions or new things that interrupted the Hehe culture on livestock keeping. Introducing new things to the culture may either lead to failure or success of the programme itself. A compulsory campaign for dipping was a complex affair in Iringa. The government introduced Dipping fee collections. The introduction of payment in dipping fees was a new and unpopular move which later led to resistance among the cattle owners in the district. Failure to pay the dipping fees reflected the failure of the State to intervene with indigenous to get good livestock production. The response of stock owners in dipping participation decreased due to the high amount of money imposed, which was three (3) shillings per beast.⁸⁴ Payments and a considerable

⁷⁹ Ibid

⁸⁰ TNA, District Officer to Veterinary Officer Iringa; The Census Report of 1933. Indicating areas of highly populated cattle. Dated 7th, December, 1936. Acc. 178. File no.13/8/28. Veterinary General, 1926-1953

⁸¹ TNA, News spoken at the District Council Meeting on 17-19 April, 1951 at Kalenga. Acc. 24. File no. 42/51/133. Native Affairs. Veterinary Cattle Keeping, 1952-1957

⁸² TNA, Veterinary Officer, Iringa District to Veterinary Officer Itheme, dipping Film Propaganda. 18th, April, 1952. acc. 24. file No. VI/13/II/181. Veterinary Cattle keeping, 1952-1957.

⁸³ TNA, Veterinary Officer, Iringa District to Veterinary Officer Itheme, dipping Film Propaganda. 18th, April, 1952. acc. 24. File No. VI/13/II/181. Veterinary Cattle keeping, 1952-1957.

⁸⁴ Julius Mgaya and Osmund Kapinga, Iringa dipping Scheme in Mufindi, 1940-1958; Development Resisted by Peasant. *EAS Journal of Humanities and Cultural Studies*, 4,2, (2022), 61-72.

distance to dipping brought significant opposition. It seems that forms of response consisting of tax evasions and contraventions of passed laws resulted in the non-payment of dipping fees and passive resistance against government regulations. Thus, this led to the continued and increasing resistance to dipping activities.⁸⁵ Despite the negative response, the District Veterinary Officer forced the cattle owners to dip their cattle for payments. For instance, in 1953, the Veterinary Officer Mr. G.H. Yeoman assisted the Veterinary Field Officer Mr. D. Garrick that the Dipping work needed constant pressure, as it was unpopular. He added, "Without some such system, the phrase, compulsory Dipping becomes meaningless."⁸⁶ However, the African reflected compulsory dipping was the exposition of African livestock owners to exploitation by the colonial government through veterinary officials. From their perspective dipping exposed their animals to external control through fees. Compulsory movement, and increased surveillance, while offering limited immediate benefits. This perception was reinforced by fears that cattle might be weakened, stolen or subjected to further taxation once they entered government managed dipping systems. Similar resistance occurred in Kenya where compulsory dipping was widely interpreted as instruments of economic extraction rather than animal health improvement, leading to widespread noncompliance and protest among African pastoralists.⁸⁷ Such comparisons suggest that African resistance to compulsory dipping was not rooted in ignorance, but in a rational response to coercive colonial policies that prioritized regulation and revenue over the interest of livestock owners.

Although the department implemented laws and regulations, others resisted sending their cattle to dipping tanks. The Hehe's nature in responding to orders and regulations from the government was taken as the individual's responsibility. For instance, the reports show that Thomas Makeyeye, with registration number 204, and Mgawile Chambula, with registration number 209, refused to send their cattle to dip. The District Commissioner Informed Chief or (Mnzagila) Andreas Maki of Kalenga to investigate why those people were not taking their cows to the Dip. They were in the Nzihe Register. If He found no reason, they had to be charged, with a more significant penalty to show others that the offence was unlikely to be forgiven.⁸⁸ Arguably, many cattle owners refused to send their cattle for dipping because they were required to pay dipping fees, which placed an additional financial burden on households already facing economic constraints.

Others engaged in passive resistance by avoiding dipping schedules or refusing to cooperate with veterinary officials, while some deliberately declined to have their cattle counted during

censures in order to evade future obligations. Rather than addressing these concerns through consultation or incentives the colonial government relied heavily on coercive measures. Police were deployed to apprehend defaulters, who were then taken to local native courts and charged for failing to comply with veterinary laws and regulations. The approach reinforced resentment among livestock owners and undermined trust in veterinary services, revealing how enforcement-based policies often deepened resistance instead of encouraging voluntary participation.

Colonial state Administrative Surveillance, Coercion, and Legal Sanctions

Historians have widely argued that colonial control in Africa was maintained through intertwined systems of administrative surveillance, coercion and legal sanction, particularly in rural economies centred on livestock. Using a historiographical approach, scholars such as Mahmood Mamdani and David Anderson emphasise that veterinary policies were not neutral health interventions but instruments of governance that extended state power into everyday African life.⁸⁹ In Iringa, as in other colonial districts, livestock censuses, compulsory dipping, and the collection of dipping fees enabled the colonial administration to monitor cattle ownership and regulate African production. These measures placed livestock owners under constant observation, making resistance visible and punishable.

Comparative studies from Kenya and Zimbabwe further illuminate the Iringa experience. In Kenya, compulsory dipping and forced labour for dip construction were enforced through chiefs and police, while African clerks received minimal or no remuneration, reinforcing exploitative labour relations.⁹⁰ Similar patterns were evident in Iringa, where African were compelled to construct dipping tanks and maintain veterinary infrastructure under coercive conditions. When livestock owners resisted by refusing to pay dipping fees or avoiding censuses, the colonial state responded not through negotiation but through legal sanctions administered in native courts. As historians note, these courts functioned less as institutions of justice and more as mechanisms for enforcing colonial discipline.⁹¹ By using Iringa within this broader African historiography, it becomes clear that colonial veterinary policy was part of a wider system of control that prioritized administrative order and revenue extraction over African welfare.

Conclusion

This study has examined the enforcement of cattle dipping regulations in Iringa District by situating them within their wider colonial context and tracing change over time. The evidence demonstrates that dipping regulations were enforced through a

⁸⁵ Mwatwara. "A History of Veterinary services and African livestock regimes in Colonial Zimbabwe, 114.

⁸⁶ Tanganyika Territory Annual Report of the Department of the Veterinary Science and Animal Husbandry, 1955. Volume II. Research and Statistical. (Dar es Salaam. Government Printer, 1957), 49.

⁸⁷ David M. Anderson, *Eroding the Commons: The Politics of Ecology in Baringo, Kenya, 1890-1963*.

⁸⁸ TNA, District Commissioner to Sub Chief Andrea Maki of Kalenga; Investigation on Thomas Makeyeye and Mgawile Chambula who resisted to dip their cattle. 10th, January, 1955. Acc. 24. File no. VI/13/II/345, Veterinary Cattle Keeping, 1952-1957.

⁸⁹ Mahmood Mahdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism*. (Princeton: Princeton University Press, 1996).

⁹⁰ National Council for Law Reporting. *Laws of Kenya: Cattle Cleansing Act*. Chapter 358. Revised edition 2013 (1972). Nairobi: National Council for Law Reporting. Accessed March, 10, 2025.

⁹¹ Terence Ranger, "The Invention of Tradition in Colonial Africa." In *The Invention of Tradition*, ed. Eric Hobsbawm and Terence Ranger. (Cambridge: Cambridge University Press, 1983).

combination of administrative directives, compulsory attendance at dipping tanks, the collection of dipping fees, and the mobilization of police and local authorities. Archival records and comparative colonial experiences indicate that these measures were not implemented uniformly but intensified particularly from the 1930s onwards, reflecting broader shifts in colonial veterinary policy and state intervention in African livestock economies.

The historical method has also enabled an analysis of African livestock owners' response as dynamic and context specific rather than static. Over time, livestock owners in Iringa negotiated, contested, or complied with dipping regulations depending on economic pressures, labour demands, and the level of coercion applied by the state. Acts of resistance, such as refusing to pay dipping fees or avoiding cattle censuses, coexisted with selective compliance, especially when penalties became more severe this longitudinal perspective highlights African agency and shows how local communities continuously adapted their strategies in response to changing colonial policies.

Finally, by placing Iringa within a broader colonial framework, this study had demonstrated how the colonial state-maintained control through administrative surveillance, coercion and legal sanction. The use of censuses and record keeping allowed the state to monitor livestock ownership, while coercion through forced labour and police enforcement ensured compliance. Legal sanctions imposed through native courts provided formal legitimacy to these practices. Viewed historically, these mechanisms reveal that veterinary regulations functioned not only as diseases control measures but also as tools of colonial governance designed to consolidate authority and regulate African economic life in Iringa District

References

Archival sources

The National Archives of Tanzania (TNA), Dar es Salaam, Tanzania.

Published sources

1. Anderson, David. "Demography, and Drought: The Colonial State and Soil Conservation in East Africa during the 1930," *African Affairs* 83, no.332, (1984): 321-343.
2. Anderson, David., "Depression, Dust Bowl, Demography and Drought: The Colonial State and Soil Conservation in East Africa during the 1930s." *African Affairs* 83, no. 332. (1984): 321-343.
3. Anderson, David., *Eroding the Commons: The Politics of Ecology in Baringo, Kenya 1890-1963*. (Oxford: James Currey, 2002), 146-148.
4. Beinart, William "The Political Economy of Pondoland 1860-1930." *African Studies* 39, no.2 (1980): 153-176.
5. Beinart, William, and Hughes, Lotte., *Environment and Empire*. (Oxford: Oxford University Press, 2007).
6. Beinart, William., *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950*. (Oxford: Oxford University Press, 2003).
7. Beinart, William., *The Rise of Conservation in South Africa: Settlers, Livestock and the Environment, 1770-1950*. (Oxford: Oxford University Press, 2003).
8. Brown, Karen., *Mad Dogs and Meerkats: A History of Resurgent Rabies in southern Africa*. (Athens: Ohio University Press, 2011).
9. Chambati, Walter., "Changing Agrarian Labour Relations after Land Reform in Zimbabwe." In *Land and Agrarian Reform in Zimbabwe Beyond White-Settler Capitalism*. Edited by Sam Moyo Walter Chambati. (Zimbabwe, Harare. African Institute for Agrarian Studies,2013).
10. Drinkwater, Michael., "Technical Development and Peasant Impoverishment: Land Use Policy in Zimbabwe's Midlands Province." *Journal of Southern African Studies*, 15, no.1, (1989): 287-305.
11. Edward, Frank, and Hard Mikael., "Maintaining the Local Empire: The Publics works Department in Dar es Salaam." *The Journal of Transport History*, 0,0, (2019), 1-20. Doi: 1177/00225266519883457.
12. Field, K. J., "Veterinary Policy and Livestock Diseases Control in colonial India." *Journal of Imperial and Commonwealth History* 18, no.2 (1990): 241-243.
13. Ge, Tingting., "Marxist Political Economy and Its Implications for Domestic Economic development." *International Journal of Philosophy of Culture and Axiology* 21, no.1, (2024): 550-575.
14. Gilfoyle Brown K. D and (Eds)., *Healing the Herds: Diseases, Livestock Economies and the Globalisation of Veterinary Medicine*. (Athens. Ohio University Press, 2009).
15. Illife, John., *A Modern History of Tanganyika*. (Cambridge: Cambridge University Press, 1979).
16. Koponem, Juhan., *Development for Exploitation: German Colonial Policies in Mainland Tanzania, 1884-1914*. (Helsinki: Finnish Historical Society, 1994).
17. Lawrence, D.A., "The History of Veterinary Services in Rhodesia: Earliest development, 1890 to 1899." *Rhodesia Veterinary Journal*, 1, no 2 (1970): 30.
18. Lotte Hughes., *Moving the Maasai: A Colonial Misadventure*. (UK. Palgrave Macmillan, 2006).
19. Mackenzie, Fiona, D *Land, Ecology and Resistance in Kenya, 1880-1952*. Portsmouth, NH: Heinemann, 1998).
20. Mahdani, Mahmood., *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism*. (Princeton: Princeton University Press, 1996).
21. Mboya, Pius., "Livestock versus Cotton: A conflict in the early British Colonial Economic policy in Usukuma 1921-1950. The case study of Shinyanga District – Tanzania." (M.A. History Dissertation. University of Dar es Salaam. 1987).
22. Mgaya. Julius and Kapinga, Osmund., "Iringa Dipping Scheme in Mufindi 1940-1958. Development' Resisted

- by Peasants.” *EAS Journal of Humanities and Cultural Studies* 4, no.2 (2022):2663-6743. Doi: 10.36349/easjhcs. 2022.v04i02.00X.
23. Moore, Henrietta, L and Vaughan, Meghan., *Cutting Down Trees: Gender Nutrition, and Agricultural Change in Northern Province of Zambia.1890-1990*. (London: James Currey, 1994), 87-90.
 24. Murei, Miriam, Nyancho Samwel A. and Lilechi, Melvine C., “Impact of Colonialism on the Indigenous Farming Practices of Nandi People in Kenya, 1895-1963.” *African Research Journal of Education and social Sciences* 7, no. 3 (2020): 9-20.
 25. Mwatwara Wesley., “Even the Calves Must Dip.” East Cost Fever, Africans and the Imposition of Dipping Tanks in southern Rhodesia, c. 1902-1930.” *South African Journal Historical Journal* 66, no.4. (2014), 590-611.
 26. Mwatwara, Wesley, “If our Cattle die, we eat them but these white people bury and burn them! African Livestock Regimes, Veterinary Knowledge and the Emergence of a Colonial Order in Southern Rhodesia, c. 1860-1802.” *Kronos*, 41, no.1 (2015): 112-141.
 27. Mwatwara, Wesley., “A History of State Veterinary Services and African Livestock Regimes in Colonial Zimbabwe, c. 1896-1980.” (PhD Dissertation, Stellenbosch University, 2014).
 28. Mwatwara, Wesley., “Better Breeds? The Colonial State, Africans and the Cattle Quality Clause in Southern Rhodesia, c. 1912-1930.” *Journal of Southern African Studies* 42, no.2, (2016): 333-350.
 29. National Council for Law Reporting. *Laws of Kenya: Cattle Cleansing Act*. Chapter 358. Revised edition 2013 (1972). Nairobi: National Council for Law Reporting. Accessed March, 10, 2025.
 30. Pietikainem, Vivi., “Measures to prevent overstocking and overgrazing in woodlands. A case study in Babati, Northern Tanzania.” (M.A. Dissertations. Soderton University College, 2006).
 31. Poleykett, Branwyn and Mangesho, Peter., “Labour Politics and Africanization at a Tanzanian Scientific Research Institute, 1949-66.” *Journal of the International African Institute*, 86.1. (2016), 142-161.
 32. Raikes, Phillip L., *Livestock Development and Policy in East Africa*. (Uppsala: Scandinavian Institute of African Studies, 1981).
 33. Ranger, Terence., “The Invention of Tradition in Colonial Africa.” In *The Invention of Tradition*, ed. Eric Hobsbawm and Terence Ranger. (Cambridge: Cambridge University Press, 1983).
 34. Swart, Sandra., “Animal in Africa History,” In *Oxford Research Encyclopedia of African History*. Retrieved 14, Dec. 2025. From <https://oxforre.com/africanhistory/view/10.1093/acrefore>
 35. Thiesen, Cassandra M., “Contestation over Agricultural Production in Colonial Africa,” In *The Oxford Handbook of Agricultural History*, ed. Jeannie Whayne. (Oxford: Oxford University Press, 2024), online edition. Oxford Academic, 21, March, 2024.
 36. Tilley, Hellen., *Africa as a Living Laboratory. Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*. (Chicago: University of Chicago Press, 2011), 233-235.
 37. Waller, Richard., “Clean ’and ‘Dity’: Cattle Diseases and Control Policy in Colonia Kenya, 1900-1940.” *The Journal of African History* 45, no.1, (2004):45-80. Doi: 10.1017/s0021853703008508.
 38. Werbner, Pnina *The Making of an African Working Class. Politis, Law and Cultural Protest on the Manual Workers Union of Botswana*. (UK. London. Pluto Press, Archway Road, 2014).
 39. Whalin, Laura, Weary Daniel M., and Keyserlingk Von., “Understanding Behavioural Development of Calves in Natural Settings to Inform Calf Management.” *Animals* 11, no 8, (2021): 2446 -2462. <https://doi.org/10.3390/ani11082446>.