# Livestock and veterinary health in southern Mozambique in the beginning of the twentieth century: the case of the fight against East Coast fever

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Abstract

Drawing on the example of southern Mozambique, this article proposes a contribution to the historiography of the social dimensions of veterinary health in colonial contexts and their effects on livestock. More specifically, it analyses the way East Coast fever, a protozoonosis of cattle, was fought in this region in the first decades of the twentieth century by highlighting the repressive nature of the sanitary police measures put in place by Portuguese authorities, how they were contested by different agents and how they opened the way for the introduction of new modes of population and spatial control.

Keywords: veterinary health; Mozambique; colonialism; history; Africa.

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Our knowledge about the impact of different veterinary diseases in Mozambique in the late nineteenth and twentieth centuries, and about the responses of Portuguese colonial authorities and their effects in local African agro-pastoral societies, is still very limited (Dube, 2015; Mavhunga, Spierenburg, 2007).

This is in sharp contrast with the attention dedicated to this topic in the historiography of Mozambique's neighbouring territories. Some studies have demonstrated how, in the context of the fight against an infectious disease responsible for a high mortality of bovine cattle like rinderpest, African populations were particularly affected by coercive veterinary health measures, which they contested in different ways. Relying on biased perceptions about local cattle, these sanitary measures ultimately justified additional limitations to African populations' access to different natural resources, further contributing to their impoverishment and enhancing racial divisions present in colonial societies (Bundy, 1987, p.199; Mwatwara, 2014, p.74; Sunseri, 2018, p.19; Waller, 2004). Other studies have analysed the different strategies employed by African owners to rebuild their herds after the significant losses they suffered and to rehabilitate the mutual relationships surrounding cattle, so important to the functioning of their societies (Phoofolo, 2004, p.106). The growing interest in climate history has in turn allowed us to understand the devastating effects of veterinary diseases in southern Africa in the context of the ecological crisis caused by drought in the mid-1890s (Pribyl et al., 2019, p.2688).

The goal of this article is to contribute to the historiography of the social dimensions of veterinary health drawing on the case of southern Mozambique, a region with ecological characteristics appropriate for livestock and where bovine cattle historically had a significant role in the lives of local African societies, unlike in other areas of the territory. More specifically, we propose to probe a number of primary sources – documents emanating from the administrative services of Mozambique, official reports, publications in specialised journals and some press of the period – to determine the way East Coast fever, a protozoonosis of cattle, was fought in southern Mozambique in the first decades of the twentieth century, as well as its impact on African livestock.[1] This analysis will highlight the repressive and excessive character of the sanitary police measures carried out by Portuguese authorities and explore the ways different agents contested them.

## The dynamics of livestock in southern Mozambique in the late nineteenth and early twentieth centuries

In the past years a number of archaeological and historical studies have helped reconstruct the history of southern Mozambique, a region with over 125,000km$^2$, bordered by the Save river to the North, and to the South and West by South Africa, inhabited mostly by groups of populations named Tsongas or Thongas, as well as Chopis, Ngunis, among others.[2] Rich in spontaneous grasslands, the region below the Save river was historically populated by significant herds of African cattle, known as landim, which played an extremely important symbolic, social and economic role in local agro-pastoral societies. Sheep, goats and equids, in turn, also played a relevant, though less central, role in these societies (Brock, 1989, p.10; Newitt, 1997, p.149; Clarence-Smith, 2018, p.113; Ekblom, 2015).

One of the ecological circumstances that made the south particularly suitable for livestock and which set it apart from other regions of Mozambique was the relative absence of the tsetse fly. Indeed, except in limited areas, the tsetse, vector of nagana or animal trypanosomiasis – a disease caused by the *Trypanosoma* protozooarian and often fatal for cattle – did not exist in southern Mozambique. From Manica and Sofala all the way to Niassa, however, and in spite of the variations observed during the twentieth century and a few exceptions, tsetse belts occupied most of the remaining territory, significantly limiting the possibilities of livestock (Silva, 1956, p.5).[3]

The central role of livestock in the south and the specific practices and social relations associated with it, as well as regional variations, were discussed by Henry Junod (1996a,1996b), a Swiss missionary and the main ethnographer of societies called Tsonga, in an influent work originally published in 1913. Junod emphasized a number of relevant aspects, namely how cattle, a symbol of wealth and power, were under the exclusive responsibility of men and boys, as well as how meat and milk had a role in both diet and as markers of social hierarchy (Junod, 1996b, p.301-308, 1996a, p.48-51). Among the groups Junod studied, the *lobolo* or bridewealth, central to family life, was the main institution under which the distribution of cattle was made. Given that the marriage was seen not as an agreement between two individuals, but rather between two groups, the *lobolo* – whenever possible paid in cattle, but in some cattle-less areas replaced by hoes or pounds earned in South Africa – were a way of the groom's family compensating the bride's family for the loss of a member, of re-establishing the lost balance (Junod, 1996b, p.124-125).

Cattle and its products were also distributed in other ways, revealing different power relations and hierarchies in the clan. Junod (1996a, p.48) mentioned that, according to local custom, small owners handed their cattle to larger owners, as the latter had boys to tends their herds. More important however was the way the chiefs entertained clientelist relationships with village chiefs, their subjects, through matrimonial alliances, the distribution of land and the farming out of cattle, ensuring loyalty, as another study about the region has shown (Harries, 1994, p.91). In areas like Magude and Moamba (former Sabié), with high quality grasslands and with a social and economic differentiation of larger vis-à-vis smaller owners, a study has also pointed out the role of cattle loans as a strategy for reducing the needs of poorer families in times of drought and famine (Manghezi, 1983, p.28-29).[4]

The political, social, ecological and sanitary conditions in southern Mozambique during the nineteenth century were however not static, and were in reality unfavourable to livestock, a fact that was not lost on Junod (1996b, p.254-256).[5] Firstly, Nguni expansion, culminating in the formation of the Gaza state, as well as the military campaigns launched by the Portuguese since the mid-nineteenth century, both marked by raids and confiscations, led to significant political and social reconfigurations and to changes in the control over livestock (Newitt, 1997, p.256; Harries, 1994, p.8).[6]

The cattle population in the region was also influenced by the droughts that periodically affected it, damaging grasslands and weakening animal health (Newitt, 1997, p.253; Harries, 1994, p.145). Importantly, southeast Africa more broadly experienced a serious ecological crisis caused by drought in the second half of the 1890s, compounded by other disasters such as famine, locust outbreaks and epidemic disease (Pribyl et al., 2019). Thus, as many

heads of cattle died of starvation, others will have been killed in times of hunger, fulfilling their traditional role by ensuring food security (Junod, 1996a, p.50).

To understand this variation we also need to take into account the regular occurrence of epidemic cattle diseases. The most lethal disease to hit the region in this period was rinderpest, an infectious disease of wild and domestic ungulates, namely cattle, only eradicated globally in 2011 and marked by a high mortality. According to recent estimates, the African rinderpest panzootic killed 90% of the cattle of several territories between 1888 and 1897 (Sunseri, 2018, p.1). But unlike in some of those territories, where fledgling veterinary services and a significant investment in the development of a vaccine not only allowed to determine the damage caused by rinderpest, but also plan a response to it and evaluate its efficiency, in Mozambique little was done when the disease reached the territory in 1897. The lack of a general census of cattle before 1897 did not even allow authorities to accurately quantify the scale of the damage, although the impressionistic reports in available sources are unanimous in recognizing that few cattle survived (Costa, 1899, p.124; 2a Circunscrição..., 1904; Relatórios..., 1908, p.22, 98; Junod, 1996a, p.48). Rinderpest would eventually disappear with the death of the hosts, i.e. the cattle, and not as a result of the intervention of authorities (Mendes, 1998, p.114).[7]

The insufficient and ineffective response to rinderpest is not surprizing when we consider that in 1897 the Portuguese were still fighting to control the south of Mozambique and that they had not yet created veterinary services, not even in urban centres. In Lourenço Marques, the 1886 health report shows that Portuguese authorities were not only unprepared to deal with veterinary pathologies but also showed little concern with them or with the risks posed to public hygiene by the consumption of meat without sanitary control. Cattle were indeed normally slaughtered in backyards and the meats destined for consumption were not generally inspected by the health officer, a position normally occupied by experts without knowledge of veterinarian health (Ferreira, 1890, p.49-50).

The intervention of military veterinarians integrated in the contingents sent to Mozambique in the context of Portuguese occupation campaigns changed this panorama occasionally from the 1890s, in Lourenço Marques as well as in specific rural areas, but in limited ways.[8] During their two-year assignments, some of those military veterinarians provided support to the cattle in the regions they were assigned to, but they had time constraints and obvious knowledge constraints about "exotic" or "tropical" pathologies, as well as scant diagnostic methods available to them (Leal, 3 dez. 1903; Mendes, 2005-2006). They furthermore had little time to assist the cattle of civilian authorities and private individuals, as they were already entrusted with the inspection of meats in Lourenço Marques' slaughterhouse and with maintaining the health of the army's horses and cattle, the latter used for transport and food (Leal, 3 dez. 1903). This also meant that authorities neglected the inspection of cattle imports namely from Madagascar (Campbell, 1990-1991), while many cattle escaped any form of control by entering Mozambique through land, such as during the Second Anglo-Boer War (1899-1902) (Leal, 3 dez. 1903; Neves, 1932, p.112).

The expansion of mechanisms of colonial domination put in place by the Portuguese government, namely fiscal and labour obligations, and the penetration of capitalism, also reflected in livestock. In order to ensure the payment of the onerous hut tax, charged in

cash, African owners were forced to sell their cattle, especially in periods of poor agricultural yields (Serviço..., 1909).[9] Many of the men that, according to local custom, tended cattle, had been forced, partly because of periodic drought, to look for jobs in the sugar plantations and the mines in South Africa, neglecting their normal activities. To fulfil the new labour regime imposed by the Portuguese in Mozambique, labour migration routes to the Rand mines of the mid- and late nineteenth century intensified in the beginning of the twentieth century, as did forced internal migration to the growing capital of Lourenço Marques and to public works and agricultural developments in different parts of the territory (Junod, 1996a, p.48-51; Newitt, 1997, p.406-411). These elements, alongside the monetization of the economy, had long been contributing to the fact that the *lobolo*, typically paid in cattle, was in some areas now paid in hoes or pounds (Junod, 1996b, p.255; Zamparoni, 1998, p.56). But the cash gained in the mines also allowed some men to re-invest in cattle, both to pay the *lobolo*, or simply to replenish the herds affected by war, diseases and drought (Ferrão, 1909, p.102; Brock, 1989, p.202).[10]

A final element must be noted: the livestock activities of settler populations. Colonial authorities in Mozambique hoped that the expansion of the settler livestock sector according to modern methods, a symbol of the desired economic progress of the colony, would regularly supply Lourenço Marques and other urban centres with quality beef and milk (Conacher, 1910, p.76). In the beginning of the century, the number of settler farms producing cattle for beef and milk was slowly growing, especially in the regions surrounding the capital, in Marracuene and Umbeluzi (Relatório..., 1910, p.123; Anuário..., 1917-1918, p.341). A few European owners had also settled in areas with high quality grasslands further away from the capital, such as Magude and Sabié (Ferrão, 1909, p.74, 101).

However, with the possible exception of a few imported bulls, the herds in those farms were built through the purchase of cattle to African owners, an aspect that elsewhere has been interpreted as a sign of the interdependence between African and European livestock (Waller, 2004, p.47). And while, in 1915, attempts were being made to stimulate beef trade through monthly markets in specific districts under official supervision, the buying and selling of cattle was generally made without state intervention, often in conditions that were disadvantageous to African owners.[11] In practice, meat traders were responsible for the flux of cattle and beef between the capital and livestock farms. But the way they took advantage of the vulnerability of African owners, attempting to purchase heads for the lowest price, or even resorting to fraudulent strategies, were denounced in the beginning of the century by different critics (Albasini, 7 abr. 1909; Neves, 1932, p.115).

## From rinderpest to East Coast fever in southern Africa

In late 1901, when the continent was only just beginning to recover from the effects of rinderpest, alarming news arrived about a "tick fever" that had started to kill cattle in great numbers in what was to become Southern Rhodesia. This disease, we now know, was not new, but had reached epidemic proportions. It was East Coast fever (ECF), also known at the time as Rhodesia fever or tropical piroplasmosis (and currently named theileriosis), a protozoonosis of cattle transmitted by the brown ear tick. Diagnosed through the presence

of symptoms common to other diseases – fever, swelling of the lymph nodes, anaemia – noticeable after an incubation period, ECF, which was already endemic in several regions of the continent, was characterised in this period by a high mortality, around 95%, and was often mistaken for another piroplasmosis, Texas fever, in turn transmitted by the blue tick (Cranefield, 1991; Norval, Perry, Young, 1992).

Before we look at its consequences in Mozambique, it is important to note that the ECF epizootic would affect all the south and east of Africa and would become a focus of political and scientific attention in the coming decades, garnering the contribution of different specialists, similarly to rinderpest. Due to its regional impact and the fear of infection it caused, especially in the vicinity of settler livestock areas, already existing or under expansion in Southern Rhodesia and in the Republics that in 1910 formed the Union of South Africa, ECF strongly influenced the internal and foreign policy of the period, with inter-colonial veterinary conferences organised mostly dedicated to it (Cranefield, 1991; Norval, Perry, Young, 1992).[12] The fact that it was vector-borne, on the other hand, made ECF a more complex disease, affecting animals but also the environment, which had implications for the way it would be fought (Waller, 2004, p.47).

Similarly to what had happened a few years earlier with rinderpest, European experts, Robert Koch being the most famous among them, but also Arnold Theiler, were hired by the British and Boer governments to determine the aetiology of ECF and to find ways of fighting it (Norval, Perry, Young, 1992, p.13 e s.; Brown, 2005). The aetiological agent, *Piroplasma parvum*, had been discovered by Koch in Dar es Salaam in 1897. Theiler, on the other hand, famously identified the brown ear tick as the vector of the disease, in 1902. Research continued in the next years in different areas, with Koch and Theiler focusing on the area of immunization and inoculation to protect healthy animals, while also conducting trials to determine a method of eradicating ticks through the old method of arsenic baths, already used in the fight against the blue tick, the vector of Texas fever (Norval, Perry, Young, 1992; Cranefield, 1991).

Theiler and Koch's immunization and inoculation trials were, however, not particularly successful. Ultimately, these scientists would make a major contribution to the understanding of the aetiology of the disease and to the fight against the vector through sanitary measures. In different combinations, with different emphases and different resources, those sanitary measures would be used across south and southeast Africa. This included stamping out (or compulsory culling of sick cattle or of cattle that had been in contact with infected heads); quarantining entire regions and limiting cattle transit outside and often inside those areas; isolating healthy animals; fencing of "dirty" and "clean" areas (i.e. with and without ticks); banning livestock and fodder imports; as well as imposing periodic arsenic baths in dipping tanks to destroy the ticks (Norval, Perry, Young, 1992; Cranefield, 1991).

Since the sanitary police measures such as stamping out and quarantine, copied from the methods used by the British to fight rinderpest in Europe and used against the same disease in Africa, had had serious political, social and economic consequences, namely causing rebellions among African populations, authorities in the Transvaal and Southern Rhodesia, now faced with ECF, chose a different path (Gilfoyle, 2003, p.136; Sunseri, 2018, p.14). In spite of the pressure from neighbouring territories, they refused to put in practice

large scale stamping out except in the case of outbreaks, fearing its effects in the economy and the protests of European and African populations, the latter already impoverished by rinderpest and land dispossession. On the contrary, they favoured measures that were less effective in the short term, more expensive and more dependent on a high surveillance of rural areas. In this context, in 1904 and 1905 they erected a fencing system and, to avoid blocking transports, they allowed immunized cattle to circulate in certain tick-free corridors. They nevertheless resorted to stamping out, for instance in the Transvaal, where a large scale campaign launched in 1908 led to the culling of 28,000 heads of cattle in the course of three years (Diesel, 1948, p.25; Cranefield, 1991, p.196).

Once the effectiveness of arsenic baths was scientifically proved, the costly investment in a network of tanks and the measures aimed at enforcing compulsory periodic dips led to a phase, starting in 1910, where the fight against the tick became a greater priority, significantly helping to reduce mortality but failing to eradicate the disease (Diesel, 1948, p.21-24).[13] These different measures, coupled with the branding of cattle and cattle registration in herd books, would continue to be recommended in the several veterinary conferences held in the following years (Diesel, 1948, p.23; Norval, Perry, Young, 1992, p.28).[14] In South Africa, the Transvaal was the first province to eradicate the disease, in 1946, but it continued to occur in different regions for several years, while in Southern Rhodesia the last outbreak was recorded in 1954 (Cranefield, 1991, p.220-221).

Though officials resorted to less repressive sanitary measures than the ones used a few years earlier against rinderpest, the main goal of the strategies to fight ECF in those territories was nevertheless to protect European livestock. As some scholarship has shown, in territories marked by official policies discriminating against African populations in access to land and other resources, veterinary policies in the beginning of the twentieth century were racialized. In Southern Rhodesia and Kenya, for instance, and in spite of the known resistance of local cattle to tick-borne disease, African owners were the most affected by sanitary measures such as "blind" quarantines, which encompassed entire regions, and were hindered in their access to both arsenic baths and veterinary care more broadly (Dube, 2015, p.231; Hughes, 2010, p.156; Waller, 2004, p.60).

## "Only one way to follow"

Compared with the experience of the neighbouring territories discussed earlier, the history of ECF in Southern Mozambique is relatively short. While in those territories – whose governments had greater resources and were more equipped technically and scientifically, but also had more to lose in economic and political terms, given the vast areas of settler livestock expansion, the growing political influence of the settler owner sector and the resentment among African populations due to the recent measures implemented to fight rinderpest – ECF continued to exist in the 1950s, in southern Mozambique the history of ECF history started in 1901 and essentially ended in 1917.[15]

Mozambique is in fact closely linked with the history of this disease in southeast Africa. Due to their strategic location, the ports of Beira and Lourenço Marques, located in the centre and the south of the territory, respectively, frequently served as entry points of

cattle shipments imported by Southern Rhodesia and the Transvaal, which lacked direct access to the sea. In 1901 the cattle shipment imported from Australia that caused the first major outbreak of ECF in Southern Rhodesia arrived in Beira. The disease seemingly reached southern Mozambique through a different cattle shipment, this time imported from German East Africa to Beira, or directly to Lourenço Marques, in 1901 or 1902 (Norval, Perry, Young, 1992, p.11-13). While in late 1902 few areas in southern Mozambique had been affected, the announcements published ever more frequently in the *Boletim Oficial de Moçambique*, from 1904, attest to the cases reported in several districts of the provinces of Gaza, Lourenço Marques and Inhambane, some of them in districts that had once been rich in cattle, like Marracuene, Bilene, Chai-Chai, Sabié and Panda.[16]

According to a study, between 1901 and 1908, ECF reportedly caused the death of 45,000 heads of cattle in Mozambique, while, between 1908 and 1917, it killed 35,000 heads, and 25,000 additional heads were culled in the context of official stamping out measures (Norval, Perry, Young, 1992, p.37). While the value mentioned by the authors of this study for the 1908-1917 period appears in a source we were unable to access directly nor crosscheck with other sources, and included Mozambique as a whole, the value for the period before 1908 is an estimate, since as mentioned earlier, in 1900 the region lacked a cattle census allowing a more accurate comparative study. The first available census on the region below the Save river, which excluded Inhambane, reported the existence of 20,660 heads of cattle on December 31, 1908 (Arrolamento..., 13 fev. 1909). In 1915 the region of southern Mozambique numbered 60,000 heads of cattle (Botelho, 1915, p.131). According to the 1932 census the region by then had a significant herd of 375,770 cattle, though still much below the values reported in neighbouring territories (Botelho, 1934, p.7).

Even though the numbers presented by Norval, Perry and Young should be approached with caution, and even though for the moment we are unable to quantify with more accuracy both the mortality caused by ECF and by the measures put in place to fight it, it is clear that, at least on paper, the path that was being followed was that of other territories in the fight against rinderpest: sanitary police measures.[17] Indeed, in spite of the incomplete and contradictory information regarding the aetiology of the disease circulating in the beginning of the century, available sources indicate that, even before the veterinary conference held at Bloemfontein (3-5 December, 1903), where research about ECF led by Koch, Theiler and other scientists was discussed for the first time and where the Portuguese were pressured to intervene against the disease, orders had already been given in southern Mozambique to limit cattle movement between clean and infected areas and to "destroy" the animals considered sick (Leal, 3 dez. 1903).

At Bloemfontein, the apparent impassiveness of Amaral Leal, a doctor and the representative of Mozambique in the conference, contrasted with the alarm and the tense discussions between his colleagues. Maybe this was due to the fact that he was not a veterinarian, nor did he have a good command of the English language, as he humbly admitted. Or, alternatively, because at the time, as he mentioned in his report, "only an insignificant part" of the provinces of Lourenço Marques and Gaza were infected, while in neighbouring territories many heads were already dead. Suspicious of the progress that could come from the laboratory, and while awaiting more conclusive studies regarding the

role of the tick as a vector, Amaral Leal recommended an immediate census of the cattle in infected areas and a combination of stamping out and quarantine, as well as limits to the imports of beef cattle. According to Amaral Leal, the fact that Mozambique's transport network was underdeveloped would allow the colony to fight ECF more easily than other territories (Leal, 3 dez. 1903).

The government would try to go further by approving a sanitary defence regulation in December 1903, which included those sanitary measures (Leal, 3 dez. 1903; Governador-geral, 17 set. 1904). But as a veterinarian noted in the pages of the *Revista de Medicina Veterinária* (Veterinary Medicine Journal), the major publication in this area in Portugal, little was being done in practice to fight ECF. There was virtually no policing, claimed the author, and the veterinarian entrusted with the inspection of meat, unable to leave his post, ultimately only observed cattle when it was presented to him to be culled, whether or not it had ECF, and likely after it had already contributed to the infection of other stock on its way to the slaughterhouse (Guerra, 1907, p.45).

When Freire de Andrade took on the post of governor of Mozambique, in 1906, after accumulating a wide experience in military and civilian matters in the territory, the protests of Portuguese veterinarians and the pressure by neighbouring territories would finally be heard. In 1908 official veterinary services were created expressly with the aim of fighting current and future epizooties, promoting livestock "resettlement" and responding to the demands of inter-colonial cooperation in matters of veterinary health. A new livestock health regulation was also approved, initially only applicable to the region below the Limpopo river.[18]

After years of wrong diagnoses and of the territory having been, in practice "abandoned" in terms of veterinary health, 1908 finally brought with it the acknowledgement that the south was infected with ECF, as one of its future directors would admit (Botelho, 1913, p.36), and now armed with a "strongly repressive" health regulation (Mendes, 2006, p.8). The inoculation and immunization efforts carried out in neighbouring territories continued to be unrivalled in southern Mozambique, where officials betted on sanitary police measures. Thus, in areas declared affected by epizooties, owners would have ninety days to fence their livestock, otherwise it would be culled, but owners could be exempted if they sent their cattle to the slaughterhouse for consumption. Knowing that African owners lacked the means to afford fences, and that few would voluntarily surrender their herds, even if they were paid compensation, it became clear that in reality the main measure to be implemented was stamping out, both in the rural areas and in the slaughterhouses.[19] The personnel of the veterinary services, and especially European and African auxiliaries, would be in charge of executing those measures. In practice, however, given that the services were understaffed, district officers would also take part in that effort, as will be shown below.[20]

The thinking of the first director of the veterinary services, Paul Conacher, seemed to be in line with this repressive strategy, but not necessarily for the reasons that could be expected. Concerned with the spread of ECF, Conacher recognised in a report prepared little after taking office how difficult policing the territory and stopping "clandestine" cattle transit were. Hence his insistence on a fence network paid by the government, and eventually refunded by owners when their lands were included (Conacher, 1909, p.424-425).

Regarding the slaughtering of cattle, he candidly argued, in another text, that the major livestock potential of the south would have to be made at the cost of landim cattle, the local breed. In spite of its adaptability to the environment and its proven resistance to several diseases, landim cattle was, in his view, "degenerate" due to breeding at random and poor diet, making it unsuitable for the production of beef and dairy according to the standards of the modern market. "The disease," he claimed, "has therefore come to favour the new order of things, eliminating useless livestock" and freeing the pastures for animals created according to the principles of zootechny. Aside from the animals that had already died, a lot more needed to be slaughtered, saving only those that could be bred to create heavier stock, with more succulent beef and able to produce more milk (Conacher, 1910, p.79).

If the view regarding the inherent inferiority of local cattle was not new in southern Africa, having motivated official betterment policies in different territories, problematized in the historiography (Hughes, 2010, p.149; Mwatwara, Swart, 2016, p.342), Conacher went further by defending that ECF was serving as a natural strategy of control of "inferior cattle breeds." He was thus also defending that in his ideal view of southern Mozambique there would be no room for traditional African livestock, but only for modern livestock based on imported stock and improved landim cattle. All in all, this view was advocating for the end of the way of life of the African agro-pastoral communities of the south.

Once Conacher's term in office was over, in June 1911, a Portuguese military veterinarian, João Botelho, would replace him. Botelho is credited for the success in the eradication of ECF in southern Mozambique (Neves, 1932, p.114; Mendes, 2006, p.13). Even though he did not seem to share Conacher's radical perspective about the positive effects of ECF over the regeneration of the "inferior" cattle population of the south, but without seeming, like his predecessor, concerned about the situation of African owners, Botelho did not deviate from the line of action that had been followed, favourable to firm sanitary police measures in the fight against ECF. As he admitted in a report from May 1913, given the time and large capital necessary for the building of a network of tanks, as well as the doubts regarding the best method for the division of plots of land, there was "only one way to follow: the depopulation of cattle from infected areas and their quarantining for as long as necessary to kill the ticks. This was the path followed" (Botelho, 1913, p.37). In his view the results of these policies were in plain sight, since in mid-1913 only one new outbreak of the disease was on-going, in Chibuto, caused by a lack of surveillance, while the outbreaks of previous years, responsible for thousands of deaths in six of the ten districts of the region south of the Save, had been eradicated. In that area of Chibuto alone, more than 500 heads had already been killed, partly in the fields, partly in the slaughterhouse (Botelho, 1913, p.37).[21]

The little data available about the sanitary measures complementary to culling – fencing, dipping tanks, quarantines, and movement restrictions – nevertheless demonstrate their limited effectiveness. Only wealthier European owners resorted to fencing, and even the government was slow to build fences in its own properties.[22] The overwhelming majority of African owners, while mindful of the need to keep healthy and sick animals separated, burdened with taxes and wishing to keep their transhumant practices, hardly could or would want to limit their movement in that way. In turn, construction for the first dipping tank only started in 1911 at the Umbeluzi zootechnical station, when the worst phase of the ECF

had ended (Oliveira, 1913, p.55). But as Botelho admitted in his 1913 report, the government did not wish to invest strongly in dipping tanks during the stamping out, and few owners had built tanks in their farms. This meant that there was a high risk that new outbreaks would appear once cattle imported to replenish the south arrived (Botelho, 1914, p.231-233).[23]

Furthermore, judging by the warnings of the veterinary services published in the official gazette, several areas were quarantined for 15 to 18 months until restocking was recommended.[24] But given that quarantine measures were dependent on the separation between "clean" and "dirty" areas with fences, on limits to the circulation of cattle, and on periodic dips in tanks before restocking, i.e. on a vast structure of sanitation and surveillance which in practice did not exist, as we saw earlier, and given how understaffed the services were in terms of veterinarians and police officers across Mozambique, it is unlikely that these measures were carried out with the necessary strictness (Botelho, 1914, p.242-243; Anuário..., 1917-1918, p.151).

## "A death blow in this wealth of the native"

As we will see in this last section, a few sources allow us to begin to understand the social dimensions of the policies against ECF, in particular their consequences for African owners in the region south of the Save river. In areas that were not affected by the disease, like Magude, sources show that owners were actually in favour of the intervention of veterinary services to increase their herds (Uma representação..., 19 jul. 1912). But in areas declared infected, on the contrary, many owners felt that sanitary police measures were particularly violent and unfair due to the large scale of the stamping out; to the lack of information about the measures included in the sanitary regulation and in the orders coming from the veterinary services; to the lack of compensation in exchange for the culling, or to insufficient compensation; to the violence of the methods employed; and to the unequal treatment of African and European owners.[25] And as we will see from a set of examples, African owners, urban *mestiço* (mixed race) and black elites, and even colonial officials in the field, agents with different perspectives, interests and powers, shared this negative experience of the measures against ECF.

Because of its effort to denounce colonial exploitation, Mozambique's *mestiço* and black press has proved to be a key source to understand the daily lives of African populations in the colonial situation and can help us to determine their experience of the measures to fight ECF. Indeed, unlike other newspapers of the period, focused on defending the interests of the European population, *O Africano* (1908-1920) and later *O Brado Africano* (1918-1974), high circulation newspapers born of the activities of the Grémio Africano (1908) – an association that brought together some of the small black and *mestiço* elites of Lourenço Marques, employed in different sectors – had a significant presence in Mozambique's public space and were aimed primarily at the non-white educated population (Zamparoni, 1988, p.80; Rocha, 2000, p.90). And while the fight for the rights of "assimilated populations," primarily urban, took up several pages of those newspapers, the living conditions of the so-called *indígenas* ("native" populations) and the way they were affected, for instance by the labour and land policies of the government, were also prominent.[26] In a number of

particularly poignant editorials and articles, *O Africano* also drew attention to the traumatic experience of African cattle owners during the fight against ECF, levelling serious criticisms against the sanitary policies of the government.[27]

João Albasini, a distinguished member of the small *mestiço* bourgeoisie of the capital and founder of *O Africano*, launched the criticisms against the 1908 health regulation in an extremely harsh article from April 7, 1909, during the height of the fight against ECF.[28] Drawing on a telegram from (African) "Gaza populations" recently received by the press where they complained of the way they were being undermined by the articles of the health regulation that defined the price to be paid to owners for each head of cattle to be culled in case of an epizootic disease, Albasini (7 abr. 1909) accused the government of "violently" plundering cattle owners. It was not so much the techno-scientific judgment behind the decision to cull the cattle that Albasini was questioning in this instance, but rather the flawed way in which authorities had informed owners and the lack of compensation. By depriving owners of their cattle unfairly, hopelessly and without adequate justification, Albasini contended, authorities were directly contributing to the degradation of traditional family and economic life, chiefly seen through alcohol addiction. The "black" was "drinking his cattle," he stated – by which he meant the small compensation received in exchange for the cattle sold for slaughter was being spent on alcohol, leading to the worsening health of populations and to their increasing lack of interest in working towards the growth of the south of Mozambique. Coupled with the "colonial and capitalist exploitation" that was pushing the African labour force to the Transvaal, this situation was emptying the fields of the south of people and livestock, leaving them increasingly further away from the promised "progress" (Albasini, 7 abr. 1909).

In their complaints to the press, African owners were denouncing how a large scale and radical stamping out policy, and one with very little compensation, was threatening their way of life and economic activities. In turn, João Albasini's writing revealed the very specific sensibilities of a certain black and *mestiço* elite of Lourenço Marques, already highlighted in the historiography, regarding the distinct role of assimilated populations and of the so-called *indígenas* (native) (Penvenne, 1996). While denouncing the unfairness of the situation that African owners were facing in the context of the fight against ECF, for Albasini the real problem was that the government's policies were endangering the "progress" of the south. And that "progress" depended on the work of the "native" labour force, albeit with the rights and duties that presently the Portuguese government denied them. The question of animal health could therefore not be dealt with separately nor from a purely technical standpoint – it was a social, economic and political problem.

The policy against ECF would also elicit strong criticism from administrative officials in the field, as we can see from the example of the district of Sabié. Targeted in 1909 by a stamping out order due to ECF, veterinary services decided cattle in the region would be culled within a radius of 30km from the infected areas, and not 6km, unlike in other cases. According to the district officer, this meant a "violence" and a "death blow in this wealth of the native" (Relatório..., 1910, p.88).[29] It was difficult enough convincing African owners living near infected areas to cull their cattle, and it became increasingly harder to do so the further away the herds were from them (Ferrão, 1909, p.76). Those measures

were unsuitable for Sabié, the official contended, because although ECF was present, there were large herds and African owners took good care of them. Instead of the stamping out and quarantine, he argued for increased surveillance in the region (Ferrão, 1909, p.76-77).

The Sabié district administration was thus condemning the repressive and excessive policy followed by veterinary services – partly executed by administrative officials themselves –, which was endangering the local "riches." The complaints coming from this district however had an additional reason behind them. Due to its proximity to South Africa, Sabié had long been an area of legal and "clandestine" migration, and the "terror" of military conscription was, according to its administrator, the main cause for the decline of its African population in the past years, and, hence, of the decrease in its main source of revenue: the hut tax. But the discontent caused by the implementation of the livestock health regulation was also scaring populations away (Ferrão, 1909, p.79-81).[30]

Looking more closely at some correspondence from this period, the link between livestock, the settling of African populations and taxes becomes clear.[31] In the context of decreasing tax revenues and a ban on African cattle sales to unlicensed buyers due to the fight against ECF, and given that the period of tax collection was approaching and that normally cattle was sold for that purpose, in August 1909 the Sabié administrator asked the Native Affairs services to authorize cattle sales. The official also explained that a few populations living near areas considered infected and forced to sell their cattle had moved to the Transvaal, even though no case of ECF had been detected in their herds, which had led to the protests from the owners (3a Circunscrição..., 1909).[32] All in all, the Sabié administrator was in practice revealing the contradictions of the health measures in place: the owners who stayed in Sabié either had their cattle culled or had trouble paying taxes because they were not allowed to sell their cattle; those who left to avoid the slaughtering of their cattle took with them the "riches" of the region and failed to pay taxes, undermining the coffers of the district. The administrator asked for greater cattle surveillance to allow for controlled cattle sales, therefore ensuring the payment of taxes and maintaining populations in the district.[33] The director of the veterinary services, convinced of the need for radical measures, was however unflinching in spite of the situation reported in Sabié (Serviço..., 1909).

Thus in Sabié, as in other regions of the south, despite the opposition from different agents displayed in the press, in published reports and in the correspondence between services, but also observable (Albasini, 7 abr. 1909) in the migration of African populations to the Transvaal, the repressive policy of the veterinary services prevailed.

## Final considerations

In the aftermath of the devastating outbreak of rinderpest, ECF once again confronted the government of Mozambique with its limitations. This time, armed with a repressive health regulation, headed by unflinching veterinarians and pressured by other colonial powers, the government made an informed choice for large scale stamping out, failed to invest in immunization and inoculation and invested very little in dipping tanks and other supporting measures. This reactive and violent policy, which according to the comparative

bibliography was not possible in the same way in neighbouring territories because of the recent experience of the fight against rinderpest and the fear of protests from European and African cattle owners, was justified as the only possible solution because of the lack of resources. But the fact that the settler population was still relatively small in this period, and the fact that, in general, the latter had a less negative experience of the measures against ECF, probably also made this policy easier to carry out in the period between 1908 and 1917.

To a certain extent, resorting to large scale stamping out in a manner that was so detrimental to African populations meant protracting for a few more years the period of colonial occupation, i.e. war, with its own repertoire of violence. And the absence of a concern with and of a reflection about the violence of culling, the belief in the need for radical measures and the continuation of policies in spite of opposition, reveal the significant gap that separated veterinarians from the social and economic reality of the south and their indifference, in this period, regarding the visible impoverishment of African populations.

Opposition to these policies from African cattle owners, but also from urban black and *mestiço* elites and by local administrative officers, with different motivations, in turn showed how livestock continued to be important at the social and economic level in spite of the political, social, sanitary and environmental factors that had been affecting it since the nineteenth century, and more strongly since the twentieth century, with Portuguese colonial occupation.

The institutionalization of veterinary medicine in this period, and especially the fight against a disease as complex as ECF, indeed carried with it new forms of control over African populations, over their cattle, their activities, their mobility and space, that had not yet been analysed in the historiography and that help us to better understand the structures of Portuguese colonialism in the twentieth century.

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## NOTES

[1] For the period analysed in this paper, our research on veterinary health in the Overseas Historical Archives (Arquivo Histórico Ultramarino, hereafter AHU), in Lisbon, which hold the documentation regarding the Portuguese colonial administration in different territories, has proved relatively unsuccessful thus far. Relevant documentation could however be found at the Mozambique Historical Archives (Arquivo Histórico de Moçambique, hereafter AHM), in Maputo, which we cite whenever pertinent. This study otherwise relies on printed sources and the press.

[2] For a discussion on the different peoples in Southern Mozambique and the terms/designations for which they have been known over time, see Zamparoni (1998, p.43).

[3] Carried by different types of tsetse flies (Glossinae, hematophagous insects), infected with parasites (trypanosomes), nagana or animal trypanosomiasis and African (human) sleeping sickness are transmitted by bites and expanded in sub-Saharan Africa during the nineteenth century. Research carried out in the 1950s showed that the type of tsetse fly that was more fatal for animals infested 2/3 of the total area of Mozambique, limiting the possibilities of livestock (Silva, 1956, p.5-11). Nevertheless, thanks to private

investment, in the province of Zambezia in the 1930s trees were cleared in Zalala forest, the habitat of the fly, to allow for the expansion of livestock (Direção..., 16 ago. 1933). On livestock in Manica and Sofala, an area in central Mozambique ruled by the Mozambique Company between 1891 and 1942, and the tsetse problem, see Companhia de Moçambique (1934) and Mavhunga and Spierenburg (2007).

[4] Mackinnon (1999, p.104) discusses the importance for African societies of similar practices of cattle loans in the South African region of Zululand in the beginning of the twentieth century.

[5] The region of South of Save (Sul do Save) would initially be divided into three provinces (Gaza, Inhambane and Lourenço Marques), in turn divided into districts. This organization would change several times during the twentieth century.

[6] Some accounts of the Portuguese campaigns document both the way cattle was kept and consumed by the troops, as well as the way it was confiscated from African forces. They also show how Gungunhana, the Gaza emperor Portuguese troops fought against, concentrated cattle. A specific episode that took place in Palule in 1897, highlighted in those accounts, even led to an uprising of the populations when Portuguese troops apprehended the cattle of the owners, not only Gungunhana's cattle (Costa, 1899, p.68; Ornelas, 1934, p.45-47, 198).

[7] The "Instruções sobre a vacina contra a peste bovina" (Instructions about the vaccine against Rinderpest), of August 3, 1897, published in the Boletim Oficial de Moçambique (Instruções..., 11 dec. 1897), described the way the bile of an animal killed by rinderpest, and located in a pocket under the ribs, had to be extracted, and administered in healthy animals. Undoubtedly because those instructions were too complex to be implemented by laypeople, a vaccination post was created in the capital, though we have no information about how it worked (Nascimento, 2 out. 1897). In his memoirs about the Gaza campaign, captain Gomes da Costa (1899, p.124) explains that some animals were vaccinated according to the method followed in the Transvaal. On the equally weak answer of Portuguese authorities to rinderpest in Angola, another of its colonial territories, compared to events in São Tomé, see Mendes (1998, p.114).

[8] For a list of some of the military veterinarians that held posts in Mozambique in the late nineteenth and early twentieth century, see, Mendes (2005-2006, p.324-330).

[9] On the hut tax, it origins and evolution in Southern Mozambique, see Zamparoni (1998, p.43 e s.).

[10] Even though Magude was particularly affected by rinderpest, in 1908 it was already the district with the highest number of cattle in the province of Lourenço Marques, with 6,134 heads (Arrolamento..., 13 feb. 1909). In 1909, of the 2,605 existing cattle owners, nine were Europeans, 11 "Asian" and the rest were African. The latter owned 5,985 of the 6,829 cattle of the district (Ferrão, 1909, p.101). By 1917 Magude had 22,629 heads, though it was unclear how many were owned by Africans (Anuário..., 1917-1918, p.357).

[11] The portaria provincial n.777, of July 21, 1915 (Portaria..., 31 jul. 1915), created the Magude fair, to be held on the third Sunday of each month, with the goal of "helping the transactions between owners and traders."

[12] The Union of South Africa was formed on May 31, 1910 from the union under a single government of the Cape Colony, Orange Free State, Natal and the Transvaal.

[13] On the different more or less hidden forms of resistance of African populations to the dips in regions of the Union and Southern Rhodesia in that period, see Bundy (1987, p.199) and Mwatwara (2014, p.107).

[14] The maps presented in Norval, Perry and Young (1992, p.28) help follow the evolution of ECF in southern Africa.

[15] Veterinary authorities declared ECF eradicated in southern Mozambique in 1917, even though small outbreaks were reported after that date (Botelho, 1934, p.8; Diesel, 1948, p.21). For a brief discussion of the repercussions of ECF in central Mozambique, a region under the rule of the Mozambique Company, see Dube (2015). The consequences of the measures against rinderpest as well as the forms of resistance they caused in different regions of Africa are discussed in Sunseri (2018).

[16] For examples of the warnings of ECF cases reported by the veterinary services and published in the Official Gazette in 1908, see Boletim... (22 ago. 1908, 3 out. 1908).

[17] The reports and notices published by veterinary services in this period include data on the amount of livestock culled in the Lourenço Marques slaughterhouse, but it is unclear how many were culled in the context of the policy against ECF. See, for instance, Mapa... (1914).

[18] The veterinary services were created by the portaria provincial n.113, of March 5, 1908 (Portaria..., 14 mar. 1908). See also in the same number of the Gazette, the Health Regulation, of March 5, 1908 (Regulamento..., 14 mar. 1908). During the first two years, a veterinarian coming from the Transvaal

would lead the services. Veterinarians in Portugal were particularly shocked by this nomination, feeling it was a threat to Mozambique's interests (Representação..., 1909, p.217). Portuguese authorities were also pressured to act in Mozambique and in Angola deal with several diseases during the pan-African veterinary conference in Pretoria (January 1909), a fact that led the ruling governor of Mozambique to call for a systematic veterinary health plan of action in order to promote the progress of the colony and to stop new attacks of its neighbours against the Portuguese administration (Secretaria-geral, 30 jan. 1909).

[19] Regulamento de Sanidade Pecuária, de 5 de março de 1908 (Regulamento..., 14 mar. 1908). The sources found thus far do not allow us to fully reconstruct the experience of the different types of European owners regarding the measures against ECF. We do, however, know that some of these owners had the means to fence their properties, thereby avoiding the more drastic measures included in the health regulation (6ª Circunscrição, 1909). Some also built dipping tanks to dip their livestock (Botelho, 1914, p.231-233). Others, namely in Sabié, may have been affected by stamping out and quarantine measures, but no indication is given that they were not adequately compensated, which indicates a difference in treatment vis-à-vis African owners (Relatório..., 1910, p.88).

[20] In 1913 only two veterinarians worked in the region below the Save river, one of them being the director of the services, João Botelho; five European policemen were also distributed across the districts, helped by several African auxiliaries. But these European police often had to leave their functions for health reasons, thus failing to do the required surveillance (Botelho, 1914, p.242-243). On the implementation of measures against ECF by district officers and on their criticism towards veterinary services, see part "A death blow in this wealth of the native."

[21] A study from the 1980s suggests that in spite of the lack of epidemiological research, southern Mozambique's ecological conditions, which are less prone to ticks, and the low density of cattle may also have contributed to the quicker eradication of ECF than in neighbouring territories (Mazibe, Lopes, 1989, p.17).

[22] Created in 1917, the zootechnical station of Chobela in fact failed in its early attempts of improvement and reproduction because its 2,800 hectares were only fenced between 1937 and 1940 (Aires, 1947, p.44).

[23] Under portaria n.351, August 4, 1917 (Portaria..., 4 ago. 1917), dips became compulsory.

[24] See, for instance, Aviso... (22 out. 1910).

[25] In his 1913 report, João Botelho (1914, p.226) had already acknowledged the difficulties faced by the services in paying the compensation due to African owners due to "a lack of funds". A few elements allow us to understand how African populations reacted to the stamping out. When some of the livestock were shot to death by officials in front of their owners in Maputo district, the latter directed a complaint to *O Africano*, a newspaper (Gado morto..., 9 set. 1911). See also the reply to this complaint by the official and his attempt to justify the acts described (Vianna, 12 out. 1911). According to Albasini's account of a separate incident (6 dez. 1913), faced with the rumours that their cattle would be culled or sold due to ECF, some owners killed their own cattle. As for the situation of European owners, a case of favouritism of European owners, spared from the sanitary police measures applied to African owners, was for instance denounced in Bilene in 1909 (6a Circunscrição, 1909).

[26] Portuguese colonial rule in Africa since the late nineteenth century rested, in its main colonies, on a fundamental distinction, inscribed in the law, between so-called native populations (*indígenas*), mainly African and living according to custom and traditions in rural areas, limited in their rights, with onerous labour and fiscal duties and considered inferior; and so-called civilised populations, with full rights vis-à-vis the State. Another category was formed by assimilated populations and included black and *mestiço* individuals mostly living in urban areas that had somehow proved they had abandoned supposed African traditions to welcome a "modern life." For a discussion of these different categories, see Newitt (1997, p.387 e s.) and Zamparoni (1998, cap. 10).

[27] On this elite, its political and civic activities and the contradictions of ts stances regarding Portuguese colonialism, see Zamparoni (1988) and Penvenne (1996). For a history of the press in Mozambique since the nineteenth century, see Rocha's (2000) key contribution.

[28] Years later Albasini (6 dez. 1913) would harshly denounce the implementation of the regulation and the measures against ECF. But this theme would also be discussed in letters from African owners to the newspaper, in opinion columns from other authors and even in a letter written by an official as a response to the accusations of violence in the culling in his district. On this, see above note 25.

[29] "Blind" quarantines that included whole administrative regions inhabited by African populations, had also been a common practice in Kenya in the beginning of the fight against ECF, in contrast with the less damaging measures applied in areas of European livestock (Waller, 2004, p.60).

[30] Of the more than 34,000 escudos of revenue in the Sabié district in the 1908-1909 year, over 26,000 had come from the collection of the hut tax (Ferrão, 1909, p.91).

[31] A few years later, the then administrator of Sabié, worried about the restocking of African owners' herds after the ECF crisis, denounced the growing tension between the latter and European landowners, increasingly attracted by the region's pastures and by the economic potential of livestock. In this context, he argued for the creation of five "native reserves" to safeguard the situation of African populations, as well as for the introduction of a limit of 10,000 hectares to land concessions awarded to Europeans (Administração..., 16 set. 1915).

[32] In an article he published in *O Africano* in 1909, Albasini (7 abr. 1909) had already pointed out the risk that African owners, deprived of their cattle and without women, would have no alternative but to leave for the mines, emptying Mozambique.

[33] For similar criticisms from local administrators regarding the quarantine measures implemented in Kenya and the problem of lack of payment of taxes, see Waller (2004, p.58).

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