



WIDER Working Paper 2022/50

Health and ethnic inequalities in Mozambique with special reference to leprosy

Isabel Maria Casimiro¹ and Júlio Machele²

May 2022

Abstract: The subject of this paper is health and ethnic inequalities in Mozambique, with special reference to leprosy. It is argued that the health policies and strategies adopted in the colonial and post-colonial periods led to an unequal distribution not only of certain diseases but also of health infrastructures. The colonial regime, by neglecting and creating ineffective leprosaria in central and northern Mozambique, ‘ethnicized’ Lazarus disease, a fact corroborated by its current unequal distribution. In turn, post-colonial health policies and health coverage failed to take this inequality into account. The current National Leprosy Control Program aims to end leprosy and thus eliminate its identification with the ethnolinguistic groups in northern and central Mozambique. This qualitative study, which draws on reports from the Ministry of Health and NGOs, statistics, and observations, falls within the scope of the social sciences, with an emphasis on the comparative historical-sociological method.

Key words: leper, leprosy, ethnic inequalities, Mozambique

JEL classification: D78, E61, H51, N01

Acknowledgements: The authors thank Professor João Paulo Borges Coelho for his kind permission to use data from his PhD thesis ‘Protected villages and communal villages in the Mozambican province of Tete (1968–1982): a history of state resettlement policies, development and war’ (University of Bradford, 1993) in Table 2.

¹ Centre of African Studies, University Eduardo Mondlane, Maputo, Mozambique, co-corresponding author: isabelmaria.casimiro@gmail.com; ² Faculty of Arts and Social Sciences, University Eduardo Mondlane, Maputo, Mozambique, co-corresponding author: Julio.machele@uem.mz

This study is published within the UNU-WIDER project [Addressing group-based inequalities](#).

Copyright © UNU-WIDER 2022

UNU-WIDER employs a fair use policy for reasonable reproduction of UNU-WIDER copyrighted content—such as the reproduction of a table or a figure, and/or text not exceeding 400 words—with due acknowledgement of the original source, without requiring explicit permission from the copyright holder.

Information and requests: publications@wider.unu.edu

ISSN 1798-7237 ISBN 978-92-9267-181-5

<https://doi.org/10.35188/UNU-WIDER/2022/181-5>

Typescript prepared by Joseph Laredo.

United Nations University World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development. The Institute began operations in 1985 in Helsinki, Finland, as the first research and training centre of the United Nations University. Today it is a unique blend of think tank, research institute, and UN agency—providing a range of services from policy advice to governments as well as freely available original research.

The Institute is funded through income from an endowment fund with additional contributions to its work programme from Finland, Sweden, and the United Kingdom as well as earmarked contributions for specific projects from a variety of donors.

Katajanokanlaituri 6 B, 00160 Helsinki, Finland

The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

1 Introduction

During a class in the discipline of Social History of Medicine and Environment on the undergraduate course in History at the Eduardo Mondlane University (UEM), we were discussing the prevalence of certain diseases such as trypanosome, malaria, and cholera in the wake of a question formulated by Rui da Maia: ‘Why do we accept the fact that we still live with 19th-century diseases?’ (Maia 2014: 8)¹—at which point the debate slipped into a discussion of Lazarus disease.² Considering that, following the precepts of the World Health Organization (WHO), Mozambique has been free of Lazarus disease since 2008, two pertinent questions arose: (i) ‘Why has leprosy re-emerged in Mozambique?’³; (ii) ‘Why is leprosy more prevalent in northern and central Mozambique?’

Attempts to find answers, even if partial, to these questions culminated in this research, which was consolidated as we visited the 20th Century Health Inventory of the Historical Archive of Mozambique and consulted newspapers and reports. Taking into account the need to achieve a harmonious society without discrimination based on ethnicity and geographical location, we were more inclined to seek answers to the second question, but also aware of their imbrication.

Thus, with this paper we intend to contribute to the understanding of the unequal distribution of health in Mozambique with special reference to leprosy. We hope that, as a result of this study, the issue of inequality in access to medical care and in the distribution of diseases will be taken seriously and that future disease control policies will not reproduce ethnic inequalities. Only through interventions in the spirit of the 10th objective of the Millennium Development Goals (MDGs)⁴ can a harmonious society be achieved without discrimination on the basis of ethnicity and geographical location.

Based on a study of the health policies and strategies adopted in the colonial and post-colonial periods, it is argued that these led to an unequal distribution not only of certain diseases but also of health infrastructures. By neglecting central and northern territories in terms of health care delivery and by targeting the same region as the locus of ineffective leprosaria, the colonial government ‘ethnicized’ Lazarus disease, a fact corroborated, at least in part, by its current unequal distribution. In turn, post-colonial health policies and health coverage failed to take this inequality into account. The current National Leprosy Control Program aims to end leprosy and thus eliminate its identification with ethnolinguistic groups in central and northern Mozambique.

¹ At the beginning of 2008, the Democratic Republic of the Congo and Mozambique reached the leprosy elimination goal (defined as a registered prevalence rate of <1 case/10,000 population) (WHO 2008: 294).

² Lazarus is the beggar and leper in the parable of Jesus Christ ‘The Rich Man and Lazarus’, related in Luke 16:19–31.

³ Ivo Garrido, Minister of Health during the consulate of President Armando Emilio Guebuza, between 2005 and 2010, commented bitterly that leprosy, whose elimination had been confirmed by the WHO in 2009, was reappearing due to government negligence (Garrido 2020: 21). He also insisted that, ‘should there be political will and better organization, it will be possible to eliminate, and subsequently eradicate, leprosy and substantially reduce the prevalence of other currently neglected diseases such as [...] trachoma, lymphatic filariasis, scabies and rabies’ (Garrido 2020: 22).

⁴ The 10th Goal aims to reduce inequality within and among countries: in particular, by 2030, to empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status (paragraph 2).

This is a qualitative study based on discussions in the classes of Social History of Medicine and the Environment, a course taught between 2006 and 2016 in the History Department at Eduardo Mondlane University. This course allowed us to collect a copious and varied documentation on colonial and post-colonial health policies, as well as on the social history of diseases, including the reasons for their unequal distribution. Our lessons with students as well as the resulting student essays helped us to gain insights into policy and community responses to disease.

The 20th Century Health Inventory available in the Historical Archive of Mozambique has relevant data on colonial policies in relation to leprosy. The effects of these policies are still being felt today. The reports of the Ministry of Health document the effort to eradicate leprosy, but also issues concerning its regional distribution (among certain ethnolinguistic groups). Strategic Plans and Health Programs—in particular the National Leprosy Control Program—and their evaluation give us not only a measure of their achievement but also relevant projections. Non-governmental organizations (NGOs) active in leprosy control in partnership with the Ministry of Health have also produced reports and assessments of their efforts and the challenges they faced.

2 Studies on health and inequalities in Mozambique

Studies on the relationship between health and inequality in Mozambique are relatively rare. The attention of scholars was for a long time directed to the advance of colonial medical science, the role of health care delivery, the effects of structural adjustment policies in health care delivery, and the impact of war on health. The study of inequalities tended to be restricted to gender issues, with emphasis on access to power and decision-making, participation, income, education, and violence (Bonate 2005; Casimiro and Andrade 2005; Gradín 2017; Gradín and Tarp 2019; Maia 2012; Pfeiffer and Gimbel-Sherr 2007; Raimundo 2009; Vletter 2006). At the same time, the issue of ethnic inequality came to be dominated by considerations of a political and economic nature (Lavieque 2020).

It was in the wake of these concerns that specialists in tropical medicine began to study tropical diseases,⁵ partly as a way of ‘domesticating’ the African continent, which was seen as the place of disease, the white man’s grave. The dangers of infection by African ‘hosts’ of diseases as well as social control and economic exploitation of the colony were behind the campaigns against malaria, trypanosomiasis, sexually transmitted diseases (STDs), spastic paraplegia (Konzo), Chikungunya, leprosy, etc.⁶ However, few authors opened their eyes to the inequality inherent in the prevalence of such diseases.

Scholars who dealt with the relationship between health care and revolution also showed that in the first phase the ‘freedom fighters’ used health to conquer minds and hearts, offering an alternative to ‘racist’ medicine (Martins 1984: 63; Walt and Cliff 1986: 151). It can be assumed that hardly any of these authors took the time to examine to what extent proximity to the circles of

⁵ Now called Neglected Tropical Diseases (NTDs).

⁶ The colonial authorities had already in the 1930s identified ‘the great calamities that have afflicted the indigenous populations – malaria, leprosy, smallpox, sleeping sickness, parasitosis and general, and particularly intestinal, diseases’ (INLM 1934: 18); see also Dube (2009); Shapiro (1983); Vaughan (1991).

power and the exploitation of links with foreign countries (South Africa, Tanzania) dictated differentiated access to health care.⁷

Those who have discussed health in the context of the Structural Readjustment Program (SAP) have argued that it has increased inequalities in access to health care between rich and poor, but also that corruption has become widespread. Attachment to the rich–poor antithesis has made scholars myopic to the geographical dimension of inequality most evidenced by the rural–urban divide (O’Laughlin 2010: 5) and, above all, to the increase in ethnic inequalities.

War is generally addressed by scholars as a factor in the destruction and collapse of the health network (Finnegan 1992; Hanlon 1991; O’Laughlin 2020: 5; Vines 1996). Differences in access to health care due to belonging or being in the territory dominated by government forces or Renamo (Mozambican National Resistance) forces with a strong ethnic Ndaou base hardly appear in this literature, although a few authors do give attention to traditional medicine during this period (Honwana 2003; Wiegert 1996).

However, consistent concerns about health inequalities were raised at the beginning of the new millennium by the World Bank and the World Health Organization (Chao and Kostermans 2002; Gwatkin 2000; Gwatkin et al. 2007; O’Laughlin 2020: 5). In these studies, health inequalities are generally addressed in relation to the axes of family socio-economic position, maximum educational attainment, gender, age, rural/urban setting, province, access to health care, time to reach health facilities, and type of health provider.⁸ The balance tends to be unfavourable among people living in northern provinces and rural settings, as well as among the less educated and poorer (Gironés et al. 2018; O’Laughlin 2020: 14–17).

Leprosy, eradicated in 2008 but subsequently resurged, has raised the interest of various scholars, ranging from ethnographers (Dias and Dias 1998; Junod 1996) to historians (Liesegang 1994; Roque 2016; Zamparoni 2017: 13–39), anthropologists (Palhota 2012), epidemiologists (Grau-Pujol et al. 2019; Griffiths and Ready 2001; Marrega et al. 2019; Silva 2007; Stuip et al. 2003), and biologists/botanists (Conde et al. 2014; Siteo 2020). Overall, this literature treats leprosy from a clinical/epidemiological point of view and in the context of the medical political model of exclusion and integration. This literature, especially the one produced by social scientists, does not see leprosy in the context of either ethnic inequalities or the agency of patients.⁹

As a starting point we assume, in line with Robert Beaglehole and Ruth Bonita (1997) quoted by Hofrichter (2003: 6), that

the foundations of health are common to all and include basic requirements such as adequate food, safe water, shelter, safety and hope [...] These foundations have a more profound long-term effect on health status than the activities of the health system [...]. Thus creating healthy populations depends on the organization of material conditions in everyday life.

⁷ The northern, western, and southern borderlands are inhabited predominantly by cross-border communities, whose lives fluctuate between two territories in a context of border porosity. On border porosity and cross-border communities see Asiwaju (2003); Kenneth (2016); Soderbaum and Taylor (2008).

⁸ According to O’Laughlin (2020), three approaches have dominated the debate around health inequalities in Mozambique, namely liberal epidemiology, bioscience (biopower), and class. On other theories of health and inequality, including the model proposed by Whitehead and Dahlgren (1991), see Popay et al. (2003).

⁹ For a brilliant analysis on the agency of lepers in Cameroon see Mokake (2018).

As a corollary we adopt a historical-sociological perspective which sees inequality in health as a historical phenomenon (Thompson 1993: 9), that is, as something created through human agency.

Our attention is directed to unjust and preventable health inequities. We propose to reflect on ‘what conditions make health inequalities unjust’ and to consider ‘the merits of policies that prioritize the elimination of health disparities’ (Arcaya et al. 2015: 1) caused by leprosy, in other words the conditions and policies that put some ethnic groups at risk of developing leprosy and how they operate at a social level (Lockwood 2004).

3 The unequal distribution of disease in Mozambique

Evidence highlights an unequal distribution of disease in Mozambique, with explanations ranging from ecological issues to economic and social policies, culture, and access to health care. The unequal distribution of disease is closely associated with colonialism. For example, tuberculosis, although widespread throughout the territory, ended up being endemic in southern Mozambique and more associated with the Tsonga nation because of its connection with migratory labour in the mines of South Africa (Covane 1996; Harries 1994; Packard 1989). The same could be said about sleeping sickness and other zoonoses¹⁰ that threaten more people living in rural areas because they are more in contact with domestic and wild animals (see Matsimbe et al. 2017).

At a later stage, a similar situation occurred in relation to the prevalence of HIV/AIDS, which is now higher in central and southern Mozambique. In Gaza province, the cradle of migrant miners to South Africa, victims of HIV/AIDS tended to be Mozambican miners (Mungoi 2010: 98). The prevalence is also higher in urban areas (Nutor et al. 2020). Table 1 lists the provinces of Mozambique, with their approximate populations.

Table 1: Provinces of Mozambique

Region	Provinces	Population (2017)
North	Cabo Delgado	1.9 million
	Nampula	6 million
	Niassa	2.3 million
	Zambézia	5.1 million
Central	Manica	1.9 million
	Sofala	2.2 million
	Tete	2.8 million
South	Gaza	1.4 million
	Inhambane	1.5 million
	Maputo	2.5 million
	Maputo City	1.1 million

Source: authors' construction.

In turn, Konzo (a form of spastic paraparesis) has become the most prevalent disease north of the Zambezi river, especially in Cabo Delgado, Nampula, and Zambézia provinces, where cassava production reached 90 per cent of national production by the end of 1970s.¹¹ These provinces are

¹⁰ On the importance of the concept of one health, as a notion that combines human, animal, and environmental components to address global health challenges that have an ecological interconnectedness, see Bidaisee and MacPherson (2014). Countries with multiple surveys (≥ 4) and high prevalence (> 8 per cent) of Trypanosomiasis are Burkina Faso, Cameroon, Ethiopia, Mozambique, Nigeria, Sudan, and Tanzania.

¹¹ At the national level it is estimated that cassava satisfies 30–35 per cent of the energy needs of the population (Casadei 1980: 122).

plagued cyclically by famine, which drives their populations to consume raw cassava (*Manihot esculenta*), which is highly toxic. They are also provinces in which health services are hampered by barriers such as distance, lack of transport, and economic cost (Gironés 2018: 40).¹²

The United Nations recently reported that ‘Lymphatic Filariasis is endemic in 103 districts of the country [Mozambique]. The northern and central provinces are the most affected.’¹³ Lymphatic filariasis, which is associated with disadvantaged rural populations (Nelson 2018), has a distribution of 2–56 per cent in Zambezia, 5–82 per cent in Nampula, 11–66 per cent in Cabo Delgado, and 3–42 per cent in Niassa (Ministério da Saúde 2005).

Chikungunya, first detected in southern Tanzania in 1952, has become a serious public health problem in northern and central Mozambique (Gudo et al. 2016; Mugabe et al. 2018), where it generates a great social impact because of the high number of cases.

In the case of schistosomiasis, the prevalence varies dramatically across the country, with higher prevalence in Cabo Delgado, Nampula, Niassa, and Zambézia provinces and in certain provincial capital cities. Districts in the southern region of the country are the least affected (Augusto et al. 2009; Rassi et al. 2016). Possible factors in this unequal distribution include variation in socioeconomic, cultural, and environmental health conditions and poor individual and community hygiene (Augusto et al. 2009: 802; Traquinho et al. 1998).

In sum, neglected tropical diseases tend to be located in the central and northern regions of the country, the provinces of Cabo Delgado, Nampula, Niassa, and Zambézia being the worst affected (Grau-Pujol et al. 2009: 4).

4 Leprosy

The presence of leprosy in the territory that became modern Mozambique is quite old (Liesegang 1994). The first scholars during the period of ‘ethnographic effervescence’ in the 19th century recorded the presence of this disease and the ways in which the native populations dealt with it. The record made it possible, at a later stage, to document the range of medicinal plants used to treat what was regarded as a ‘doctor-beating’ disease.¹⁴

Although the native populations were unable to successfully treat leprosy, it is important to note that they did not ‘ostracize’ the patient by giving him a peculiar geographical space, far from the ethnic group or clan. The patient was treated within the ethnic group or clan and, although there were occasions when isolation in a hut was practised, this was always within the geographical limits of the ethnic or clan units (Dias and Dias 1998).

¹² The proportion of deaths due to malaria changes significantly between the provinces, being highest in Cabo Delgado (10 per cent), Nampula (9 per cent), and Zambézia (9 per cent); the lowest proportion is found in Maputo, city and province (2 per cent) (Ministério da Saúde 2015: 49).

¹³ ONU NEWS, ‘Moçambique lança Plano contra Doenças Tropicais Negligenciadas’, 9 May 2012, available at: <https://news.un.org/pt/story/2012/05/1404651> (accessed 3 February 2022).

¹⁴ From Xi-Changaan *lbhula vadayi*, meaning literally ‘winner of doctors’ (Junod 1996: 397, 409). Historically, Nampula province in the north of the country had the highest prevalence of leprosy in Mozambique. In the Makhuwa language spoken in Nampula and parts of Cabo Delgado, ‘leprosy is called Marreetha and people affected by leprosy are called Namarreetha, which means “a moribund person”’ (Deepak et al. 2013).

For powerful individuals, contracting leprosy was tantamount to imperfection and a risk to the kingdom, leading, for example, the king of Sedanda to commit suicide with poison (Santos 1999). And the same disease banned at least one major contender, Munyoro Karembera, from the succession in the Mwenemutapa Empire (Alpers 1972; Beach 1972: 14 quoting Abraham 1960: 67). Even they, however, were not ostracized.

On the Maconde plateau Europeans noted that ‘sufferers from leprosy were accepted as part of the community; they lived with their families in the village homes and offered themselves for any treatment which would bring them relief’ (Hurman 1996: 61) and that

the conception of being segregated in a colony was foreign to their nature. It involved separation from their families and from their own land for a period of at least three years, and the treatment provided could, in most cases, be obtained at the nearest dispensary [...] Great persuasion was required before patients would be admitted, and absconding from the colony was not infrequent (Hurman 1996: 95–96).

In southern Mozambique there were similar attitudes and abandonment, although reported, was rare (Liesegang 1994).

Europeans, however, came with a ‘modernizing’ discourse that sought to erase such local practices and replace them with a biomedical model of health care. According to this, lepers were to be segregated from the rest of the population. Influenced by this discourse, the Cabo Delgado black elite contended that the exclusion of lepers was a preferable practice.

In due course, the biomedical model was fitted into locally existing explanatory models (Vaughan 1991). A belief in the miraculous character of *mezimbos* (medicines) led Africans to also believe in the miracle of the ‘Jackson’¹⁵ and the combined use of the two medical systems was corroborated by the expression ‘a bit of Jesus, a bit of magic’.

This shift in attitudes also illustrates the degree of penetration of Christianity and its values into African societies, which initially did not accept the law of Christ, although it was widely taught and preached (Santos 1999: 100). For Africans, leprosy came to be seen as a divine retaliation against the impure and sinful.¹⁶ God was perceived as the agent of the disease, as he used it to punish and to cause repentance, or simply to show his might.

In contrast, in the Muslim religion, which is followed by one-third of Mozambicans, we find the expression ‘run the same way from a leprosy-affected individual as running from a lion’,¹⁷ which makes a clear allusion to the fear of the same disease, but at the same time there are instructions

¹⁵ Africans had difficulty pronouncing the word injection. In southern Mozambique injections are still called *Jacksoni*.

¹⁶ According to Sufo Carimo, general coordinator of the Fundação Sementes de Esperança (Seeds of Hope Foundation), which operates in partnership with the Association of Lepers in Mozambique (Alemo) ‘it is believed that when a person is affected by leprosy it is a punishment from God, for having done something wrong, and that this punishment can be transmitted. The person is put aside, excluded from the community’ (Centro Missionário 2018).

¹⁷ One of three well known hadiths referring to the Prophet Muhammad’s interactions and advice regarding lepers, the other two being the warning to healthy people to be cautious and to ‘keep away the distance of one or two spear-lengths from those with leprosy’ and the story that the Prophet asked a leper ‘to join him for a meal and actually took the man’s hand and put it in a dish, telling him, “Eat, in the name of Allah, trusting in Allah and putting your reliance in Him”’ (Hasnain et al. 2020: 6).

saying that separation of a leprosy patient is wrong; the Prophet himself lived among people with leprosy (Solomon et al. 2020: 195).

4.1 Colonialism, leprosy, and ethnic inequalities in Mozambique

It is at the beginning of the 20th century, more precisely in 1902, that we find ‘a small asylum for lepers [...] near Lourenço Marques [now Maputo] and a leper village, with a capacity for 150 patients’ (Rogers and Muir 1937: 33 quoted in Costa 2010: 76). The Island of the Elephants, called Guimbane¹⁸ by the local population, was conceived in the context of ‘racial degeneration’ as perceived by Portuguese colonialists and other Europeans. It started receiving those suspected to have the disease from the south of the territory, such as a group of natives from Xai-Xai in 1909.

In the discourse of the medical authorities of the time, the lepers on the Island were treated by the best specialists,¹⁹ but any European suffering from the same ailment was not sent to the Island, but evacuated to Transvaal, where in fact there was better treatment (Zamparoni 2017: 25). Racial considerations thus transformed the Island into a colony of black lepers from southern Mozambique, mostly belonging to the Tsonga ethnolinguistic group.

A race- and class-based perspective became more visible in relation to black Mozambican migrant workers in South Africa, who were quickly deported if they were ill with leprosy or even suspected of it. These were individuals from southern Mozambique who were attracted by the better working conditions offered on the plantations and later in the mining industry in South Africa from the 19th century on.²⁰ Thus, the hospitals in Transvaal rejected black lepers from Mozambique while at the same time admitting white lepers from the same territory (Zamparoni 2017: 25).²¹ Later, the multiracial integration policy produced a ‘class’ of *assimilados* (Africans who assimilated the way of life of the Portuguese and abandoned their African roots) who ‘legally’ enjoyed the status of white people and were privileged in access to social services (Moreira 1961; Rita-Ferreira 1967–68).

The Island of Elephants leprosy hospital was the first legalized landmark of race-based isolation. The leprosaria of Maleice, Rivane, Homoine, and Massavelane,²² as well as those of Panjono in Tete and Maate in Cabo Delgado (INLM 1934: 5–6), followed the same pattern.²³ There were also four granary-hospitals (Alto Molucue, Namaíta, Antonio Enes, and Montepuez)—so called because they had facilities for outpatients and agricultural farms. They were administered by religious orders. By 1971, there were more than 76 dispensaries and 174 anti-leprosy posts in Mozambique.²⁴

In the ‘scramble for Africa’, Portugal demonstrated itself to be a weak power. This weakness made it concede two-thirds of the Mozambican territory to private companies from the end of the 19th

¹⁸ *Maguimbane* in the local language means leper. It was also called Portuguese Island and Elephant Island.

¹⁹ For this reason they dubbed it the ‘idyllic island’.

²⁰ On Mozambican migrant workers in South Africa see Covane (1996, 2020a, 2020b).

²¹ On the dilemmas of *assimilados* see Macagno (2019).

²² In 1938, all 580 lepers were interned on the island of Massavelene, situated in the Inhampavala lagoon. A single ‘indigenous’ nurse was sent to assist the lepers only in early March 1939; in between, many fled and others died, leaving 335, who were hospitalized (Zamparoni 2017: 27).

²³ The reproduction of the same model of insular leprosaria advocated by the hygienists was not possible in the rest of the territory ‘by virtue of the very small number of islands near the coast possessing the indispensable conditions for the convenient installation of lepers’ (INLM 1934: 1, 6).

²⁴ ‘Os problemas de saúde em Moçambique’, *Cartaz*, 36, Feb/March 1975, p. 25.

century up to 1929. Located in the central and northern parts of the territory, these companies 'were initially content to sublease most of the land, obtaining profits without taking risks and without making excessive efforts to develop the region' (Pélissier 1994: 82). In general, the companies were 'under-capitalized, poorly equipped and without qualified personnel, revealing at the same time a great inability to develop a colonial industry and without funds to invest in a capitalist agriculture' (Medeiros 1997: 170)²⁵ or social services. Their main activities were the collection of the hut tax and the imposition of forced labour and compulsory production. The peasants reacted, abandoning the villages for refuges in the hills and forests or even for neighbouring territories (Medeiros 1997: 173–74).

In 1950, an organized campaign was started for the proper control and treatment of leprosy. With the creation of a new specialized service the system throughout the country was remodelled so as to give maximum coverage both for the treatment of patients and for their isolation where necessary (Spence 1963: 41) but these improvements were unequally distributed across the territory.

The Tsonga-dominated southern Mozambique, where the capital was located, enjoyed enormous advantages. In addition to the Miguel Bombarda Hospital, equipped with bacteriological laboratories for clinical analysis and a health unit with a special leper hospital and asylum,²⁶ was constructed in the 1950s. The industrial area of Matola had, from the 1950s, a Dermatology Hospital-Dispensary for the internment of recovering lepers, with capacity for 50 beds. There were also plans to build a technical school for the training of nurses, assistants, and laboratory and pharmacy preparers; and, no less important, an Oncology Institute (Valdiki 1966: 2). More than two-thirds of the country's doctors worked in the capital and nearly all doctors were in private practice in the three main cities, where not more than 10 per cent of the population lived (Walt and Cliff 1986). These private hospitals served mostly white people and the class of *assimilados*.

Both the central and northern regions came to depend on the Health Station in the Port of Maputo, where there was a central dispensary supplying the medical needs of all the other subsidiary dispensaries (Spence 1963: 41) as well as a lazaretto and a maritime disinfection post as annexes (INLM 1934: 5).

In the middle of the 20th century, the colonial policy of *aldeamentos* (protected villages) was enforced, ostensibly to 'protect' villages from the spread of nationalism, especially in the centre and north of the country, where the liberation movement was most intense. Theoretically, a concentrated population could be provided with health and educational facilities and amenities and services. It could also easily be taxed, administered, and recruited (Borges Coelho 1993: 211).

The programme of *aldeamentos* was developed in close connection with the unfolding of the liberation war (Newitt 2012). In 1956, there were around 30,000 families in the *aldeamentos*. The first period of the war, 1964–68, was characterized by rapid construction of *aldeamentos* in Cabo Delgado and Niassa and the following years, 1968–71, by construction in Tete province (Borges Coelho 1993: 205–06), which increased the total population to over half a million (Table 2).

²⁵ Malyn Newitt refers to 'the deplorable conditions of the territories of the Niassa Company' (Newitt 2012: 409–10).

²⁶ Now Hospital Geral de Mavalane.

Table 2: State of *aldeamentos* in December 1971

Province	No. <i>aldeamentos</i>	Population	% of total pop.	No. of sanitary posts
Niassa	119	174,189	67.6%	99
Cabo Delgado	234	254,999	44.9%	101
Tete	109	84,458	17.18%	38
Total	462	513,646	38.9%	280

Source: adapted from Borges Coelho (1993: 206).

Paradoxically, however, the *aldeamentos* also became a fertile ground for communicable diseases, including leprosy. In 1973 the prevalence of leprosy continued to be highest in the northern provinces (e.g. 20.4 patients per 100 inhabitants in Nampula and 7.4 patients per 100 inhabitants in Zambézia), while the southern region had fewer cases (e.g. 3.4 patients per 100 inhabitants in Maputo) (Government of Mozambique 1973).

Even admitting that '[i]n these asylums and hospitals patients with advanced cases of leprosy are kept until they get better while those with slight cases of leprosy receive external treatment [...] at their own homes' (Spence 1963: 41), there were those who refused medicalization or who rejected asylums and shanty towns, not to mention those who were never reached by the system, scattered mainly in the rural and remote areas north of the Zambezi River.

In the 1970s, the Portuguese colonial administration admitted that leprosy was still poorly controlled, due to operational difficulties in the territory, especially in the north of the country, where 'during the control campaigns carried out in 1973, around 65,000 cases were registered' (Casadei 1980: 32).

In the same decade, the Front for the Liberation of Mozambique (Frelimo), which had been fighting for independence since 1964, assumed that 'in Frelimo's hospital there are no tribes, no races, no religious beliefs and nothing that divides us' and also that 'our hospital is linked to the masses, because it is for them that it is intended' (Machele 1971), but at the same time the Front recognized that they could only partially cover the needs of some regions of the provinces of Cabo Delgado, Manica, Niassa, Sofala, Tete, and Zambézia, given the deficient health services in a war environment.²⁷

In sum, the colonial government neglected the foundations of health in rural areas, but more significantly in a way that favoured southern Mozambique in terms of facilities, medical personnel, nurses, and medicine distribution. Preferential treatment, literally, was given to whites and *assimilados*. Greater attention in terms of health care provision was given to the southern region, 'the nation of the Tsonga', and the capital, and the rest of the territory depended on it. Development policies and strategies such as concession of two-thirds of the territory to private companies and the creation of *aldeamentos* contributed to the inequality of provision. The situation imposed by the armed struggle for national liberation, which lasted for years and had northern and central Mozambique as its main battleground, contributed to the abandonment of leprosy patients living in rural areas. At the same time, granary-hospitals and leprosaria in the theatre of operations ceased to function.

²⁷ 'Comissão de reestruturação e reorganização dos serviços de saúde'. Speech by Hélder Martins, Mare president, during the inauguration of the Commission of Works, Maputo, 22 October 1974.

4.2 Leprosy and ethnic inequalities in postcolonial Mozambique

In 1974, Samora Machel, then president of Frelimo, proudly said that ‘despite their low technical level and lack of medicines our medical personnel have been able to cover much more for the people than the colonialist health services with all their technology and means’ (Machel 1974). This was a clear allusion to the experience of the liberated zones during the independence war, which served as the basis of a new medical policy (see Segall 1977). In 1977, Mozambique received the praise of the WHO for its achievements in preventive medicine, whose coverage had reached over 95 per cent of the population. However, ‘over 85 per cent of the 550 doctors left and rural mission’s hospitals and health posts were abandoned’ (Walt and Cliff 1986: 151). It was the rural missions and health posts that provided health care for the rural population, which was above 85 per cent.

In the new order, to fight disease in general and leprosy in particular, it became a central issue to end the exclusion and discrimination of the sick and to build new relations with leprosy patients. The existing leprosaria were transformed into health centres for the treatment of leprosy patients as well as of patients with other diseases. According to President Samora Machel, ‘for the Revolution there are no unemployed, useless, or invalid talents that cannot be utilized. Everyone has the duty and the right to participate in the collective struggle for the transformation of society and the use of nature’s resources for the benefit of the community.’²⁸

Development strategies and policies²⁹ adopted after independence were full of contradictions. Soon after independence, the new government sought to end the ‘bourgeois mentality’, to quash capitalist ideas by opening an era of nationalization. The nationalization of health care, including Roman Catholic Church health facilities (see Melamed 1984), however, had mixed results. It increased coverage capacity in preventive medicine, but the flight of cadres and difficulties in using and maintaining the equipment acquired before independence undermined curative medicine. Besides, multi-purpose health agents or health monitors (APEs) did not earn salaries from the state and were equipped with preventive rather than curative knowledge, so that leprosy patients remained untreated and infected other individuals. Health monitors ‘often stood in the uneasy position of having to depend on the good will of the villagers to subsist. Their awkward status led many of the relatively skilled and educated APEs to leave the communal villages in search of a better life’ (Borges Coelho 1993: 73). The model of an uneven health infrastructure remained unchanged and in some cases had begun to degrade.

The collectivization that followed the adoption of Marxism-Leninism in 1977 and Operation Production, which aimed to ‘make the unproductive productive’ (Quemo 2012) by taking them out of the urban areas and putting them in remote rural areas, especially in central and northern Mozambique, did not take into account the provision of health care.³⁰ It left the so-called ‘unproductive’ to their fate in Soviet-style *kulags* in the forests of central and northern Mozambique, which became hotbeds not only of discontent, but above all of neglected diseases, including leprosy.

²⁸ Moçambique Terra Queimada, ‘A Frelimo é o povo moçambicano em armas’, 5 March 2018, available at: <https://ambicanos.blogspot.com/2018/03/a-frelimo-e-o-povo-mocambicano-em-armas.html> (accessed 8 March 2022).

²⁹ They appear in the political jargon of the time as ‘option’, ‘objective’, ‘strategies’, ‘tactics’, ‘political options’, ‘ideology’, ‘political line’, ‘politics’, and ‘policies’.

³⁰ According to Benedito Machava, these re-education camps were characterized by ‘the lack of medical assistance and constant crisis of hunger’ (Machava 2019).

State resettlement policies in post-colonial Mozambique were accompanied by serious problems of health care: “There were far fewer health posts than schools in 1982 because, in part, of the greater demands in terms of quality of buildings. Other issues also made the health program more difficult to implement. This was in part because of the official attitude towards “traditional” healers’ (Borges Coelho 1998).

In an attempt to tackle a worsening crisis in the mid-1980s, the government of Mozambique adopted a Structural Adjustment Program under the World Bank and International Monetary Fund (see Abrahamsson and Nilsson 1994; Hanlon 1997). The privatizations resulting from this programme became an increasingly heavy burden on the population, and the opportunities created by it were available mostly in urban areas, especially in the southern region of the country. For example, the impoverished populations in rural areas were only attended to in public hospitals and health posts, but these were extremely deficient. Thus the Structural Adjustment Program increased inequalities between rich and poor and between rural and urban areas.

These mistakes and contradictions in development strategies and policies created tensions and discontent that were seized upon by those who opposed the new regime, but the resulting conflict paradoxically only served to exacerbate those failings.

The Civil War, between the Movement of National Resistance (MNR, later Renamo) and the Mozambican government, started in 1976. It ended in 1992 with the signing of the General Peace Agreement in Rome. The war being essentially a rural war, it contributed to the collapse of rural health services. During this period, the Frelimo government failed to address the major problems that had led to health inequalities. Neglected Tropical Diseases, with special reference to leprosy, became a public health problem in rural areas of central and northern Mozambique, while preventive medicine took place in the cities and towns, and curative medicine, re-adopted with the introduction of the private clinic at Maputo Central Hospital, became elitist and concentrated in the south, symbolized by the existing health units and services. Inequality in health care between areas controlled by government forces and by Renamo became more marked, with the exception of traditional medicine (Honwana 2003).

With the signing of the General Peace Agreement, hope for reconstruction and national unity, of ending regional and ethnic inequalities, was reborn and Mozambique began to rely on the support and cooperation of national and foreign civil society organizations in reconstruction, in the fight against poverty, in development, and in the reduction of health inequalities, especially leprosy. This opening-up was made possible by democratization and the approval of the law on freedom of association in 1991.

The growing realization that poverty was a major challenge influenced the adoption of Poverty Reduction Plans (PARPA) I and II under the International Monetary Fund. For example, PARPA II focused on ‘those suffering from diseases to which the poor are most vulnerable, namely malaria, tuberculosis, leprosy³¹, HIV/AIDS, parasitosis, and epidemic diseases that may strike during emergency situations: cholera, dysentery, and meningitis’ (Republic of Mozambique 2006: 94).

³¹ As regards leprosy, the objective was to reduce its rate of prevalence from the current 2.7/10,000 residents to <1/10,000 residents and thus obtain WHO certification by 2009 (Republic of Mozambique 2006). WHO certification came a year earlier.

To accomplish this, the programme made provisions to improve the geographic and functional coverage of the health care system and to implement an active search for all suspected cases in order that the individuals could be diagnosed and treated (Republic of Mozambique 2006: 94).

The critical analysis of the distribution of leprosy across the country in coordination with the WHO and other partners³² and the previous experience in dealing with leprosy made it possible to identify the best strategy to end leprosy and thereby eliminate its identification with central and northern Mozambique. Clinically the country introduced Multiple Drug Therapy (MDT) for leprosy in 1996,³³ at a time when the leprosy prevalence rate was 6.8/10,000 population.³⁴ Priority was given to the five provinces where leprosy was most endemic, namely Cabo Delgado, Manica, Nampula, Niassa, and Zambézia in northern and central Mozambique. These provinces were the country's poorest.³⁵

These strategies were combined with the mobilization of Mozambican society, improvement of case registration, and updating of computerized leprosy records in provinces with a prevalence/detection rate higher than 1 per 10,000 population (WHO 2010: 16–17). These activities included Leprosy Elimination Campaigns and Mini-Campaigns, the implementation of a Leprosy Day, and an increase in the number of drug distribution points, an activity managed by community volunteers (Ministério da Saúde 2012: 43).

As a result, by the end of 2008, Mozambique had achieved the leprosy elimination goal with a national prevalence rate of less than 1 case/10,000 population (WHO 2010: 17). In addition, the integration of the Leprosy Control Program into the general health services became an important policy to enable the diagnosis and treatment of leprosy patients. Mozambique's unique system of community volunteers was the backbone of the leprosy control programme (WHO 2010: 43). With these actions leprosy ceased to be a disease with ethnic geographical connotations. Northern and central Mozambique were no longer associated with leprosy, as the eternal lepers of the country.

Unfortunately, however, in 2017, according to Ministry of Health, there were about 2,000 new leprosy cases, 25 per cent more than in 2016. Even after the official eradication of leprosy, 20 endemic districts were detected (mainly in northern and central Mozambique), out of the total 154 that make up the 11 provinces. 'The increase in active search activities and the reactivation of activities in the community had as an immediate result the increase in the notification of new leprosy cases throughout the country'.³⁶ The cases were registered in Cabo Delgado and Nampula

³² In Mozambique, the Sasakawa Memorial Foundation, a non-governmental and non-profit foundation established in 1962, is one of the major partners supporting activities of the National Leprosy Control Program, which provides resources for the elimination of the disease. The country also has the Mozambican Association of People Affected by Leprosy (AMPAL) and the Association of Lepers of Mozambique (Alemo). In 2020, the Portuguese Association Friends of Raoul Follereau (APARF) lent its support to some associations and projects in the fight against leprosy.

³³ Eye complications in leprosy have decreased. This is a result of earlier diagnosis and highly effective MDT, combined with timely treatment of secondary nerve damage by steroids.

³⁴ However, not all districts have followed the same trend. There are still 24 districts (16.9 per cent) with a prevalence rate above 1 case per 10,000 inhabitants.

³⁵ Almost all non-monetary poverty indicators, including nutrition indicators, obtained from the Inquérito ao orçamento Familiar 2008/09 (Household Budget Survey 2008/09) were substantially more favourable in the south in general and in Maputo province and city in particular (Government of Mozambique 2010: 31).

³⁶ Lusa, 'Moçambique identifica número crescente de casos de lepra', 30 January 2019, available at: <https://www.dn.pt/lusa/mocambique-identifica-numero-crescente-de-casos-de-lepra-10508639.html>, accessed 19 September 2021).

provinces in the north, as well as in Manica, Sofala, and Zambezia.³⁷ The escalating terrorism in Cabo Delgado since 2017 with internally displaced people and the collapse of rural health services in some districts under attack may worsen the situation.

In view of this resurgence of conflict, the WHO recommended intensified case-finding, strengthened surveillance, improved contact tracing, and early detection of cases in children to ensure the achievement of the global target of zero infections in children by 2020.³⁸ However, in February 2021, it was reported that in Cabo Delgado province, the prevalence of leprosy remains at 2.1 per 10,000 inhabitants, the districts of Chiúre, Mecufi, Meluco, Metuge, Montepuez, Nangade, Namuno, and Pemba city having the highest number of leprosy cases.³⁹

In sum, the conditions that were conducive to the prevalence of leprosy have not been removed but are still latent. When leprosy was declared eliminated in 2008, there had been a laxity in epidemiological surveillance and in preventive and curative care. Moreover, NGOs with experience of working with leprosy in Mozambique abandoned the area with a sense of ‘target achieved’. The resurgence of leprosy has taken advantage of the conditions that made it possible in central and northern Mozambique—long distances to hospitals, health centres, and health posts; lack of access roads; an unacceptable ratio between the population and existing services; discrimination; lack of government commitment—added to the effects of the recent terrorism in Cabo Delgado. However, evidence suggest that the government, together with its partners, is again working toward the elimination of leprosy and its subsequent identification with ethnicities.

5 Conclusion

Mozambique has a history of unequal distribution of disease, which begins with colonization. Pacification, the installation of the colonial administration and, above all, economic exploitation and social control led to an unequal distribution of diseases. The European model of isolation in ‘islands’ was reproduced in the colony through leprosaria and granary-hospitals for combating leprosy. The distribution of the sanitary network was based on race and class. The north and the centre of the territory were always at a disadvantage, with an unfavourable index in terms of health indicators. These are territories inhabited by a considerable number of minority ethnic groups. Therefore, the first steps that would lead to the association of leprosy with geographical and identity spaces were taken during colonialism.

The post-independence trajectory of the new country did not allow the bridging of ethnic inequalities in access to health and the distribution of diseases. The option for preventive medicine, highly praised, was made at the cost of curative medicine, leaving part of the lepers to their fate.

³⁷ Nampula province has the highest number of leprosy cases in the country. In the first half of 2018, the Ministry of Health recorded a total of 553 cases, mostly in the districts of Lalaua, Meconta, and Mogovolas, where many villages had no electricity or paved roads, making access to health centres difficult (Muchanga 2018).

³⁸ The WHO database on leprosy in Mozambique from 2005 to 2020 can be found at: https://apps.who.int/neglected_diseases/ntddata/leprosy/leprosy.html

³⁹ Rádio Moçambique, ‘Há casos de lepra em Cabo Delgado, apesar da declaração do fim da doença’, 1 February 2021, available at: <https://www.rm.co.mz/rm.co.mz/index.php/component/k2/item/14579-ha-casos-de-lepra-em-cabo-delgado-apesar-da-declaracao-do-fim-da-doenca.html> (accessed 19 September 2021).

The 16-year war contributed to the collapse of the rural health network, where the majority of the population lived and where health determinants were already very poor.

Through cooperation with the WHO and other civil society organizations, Mozambique managed to eliminate leprosy in 2008, thus putting an end to its association with ethnic groups in central and northern parts of the country. Its resurgence represents, in part, the government's failure to remove critical conditions conducive to the spread of the disease.

References

- Abraham, D.P. (1962). 'Early political history of the Kingdom of Mwene Mutapa (850–1589)'. In E. Stokas (ed.), *Historians in tropical Africa, proceedings of the Leverhulme Inter-Collegiate History Conference*.
- Abrahamsson, H., and A. Nilsson (1994). 'Moçambique em transição: um estudo da história de desenvolvimento durante o período 1974 - 1992' (Maputo: CEGRAF, 1994).
- Alpers, E. (1970). 'Dynasties of the Mutapa-Rozwi Complex'. *The Journal of African History*, 11(1970): 203–20. Available at: <https://www.africabib.org/rec.php?RID=190927445> (accessed 4 May 2022).
- Arcaya, M.C., A.L. Arcaya, and S.V. Subramanian (2015). 'Inequalities in health: definitions, concepts, and theories', *Global Health Action*, 8(1): 27–106. <https://doi.org/10.3402/gha.v8.27106>
- Asiwaju, A. (2003). *Boundaries and African integration: essays in comparative history and policy analysis*. Lagos: Panaf Publishing.
- Augusto, G., et al. (2009). 'Geographic distribution and prevalence of schistosomiasis and soil-transmitted helminths among schoolchildren in Mozambique'. *The American Journal of Tropical Medicine and Hygiene*, 81(5): 799–803. <https://doi.org/10.4269/ajtmh.2009.08-0344>
- Beach, D. (1972). 'Historians and the Shona Empire: Part I. Henderson Seminar Paper 19. University of Rhodesia, Department of History.
- Beaglehole, R., and R. Bonita (1997). *Public health at the crossroads: achievements and prospects*. Cambridge: Cambridge University Press.
- Bidaisee, S., and C.N.L. MacPherson (2014). 'Zoonoses and one health: a review of the literature'. *Journal of Parasitology Research*: 874345 (online). <https://doi.org/10.1155/2014/874345>
- Bonate, L. (2005). 'Dispute over Islamic funeral rites in Mozambique'. *Social Sciences & Missions*, 17: 41–59. <https://doi.org/10.1163/221185205X00121>
- Borges Coelho, J.P. (1993). 'Protected villages and communal villages in the Mozambican province of Tete (1968–1982): a history of state resettlement policies, development and war'. Ph.D. thesis, University of Bradford.
- Borges Coelho, J.P. (1998). 'State resettlement policies in post-colonial rural Mozambique: the impact of the communal village programme on Tete Province, 1977–1982. *Journal of Southern African Studies*, 24(1): 61–69. <https://doi.org/10.1080/03057079808708567>
- Casadei, E. (1980). *Moçambique: água, alimentos e ambiente*. São Paulo: Molisv.
- Casimiro, I.M., and X. Andrade (2009). 'Critical feminism in Mozambique: situated in the context of our experience as women'. In A.A. Ampofo and S. Arnfred (eds), *African feminist politics of knowledge: tensions, challenges, possibilities*. Uppsala: The Nordic Africa Institute.
- Centro Missionário (2018). 'Diocese de Pemba: uma irmã do outro lado do mundo'. Available at: <https://www.diocese-braga.pt/centromissionario/noticia/18023/> (accessed 21 September 2021).

- Chao, S., and K. Kostermans (2002). 'Improving health for the poor in Mozambique: the fight continues'. HNP Discussion Paper 29297. Washington, DC: World Bank. Available at: https://documents1.worldbank.org/curated/pt/623221468758086241/820140748_200405161041159/additional/292970Chao1Improving0Health1whole.pdf (accessed 21 April 2022).
- Conde, P., et al. (2014). 'A missão botânica de Moçambique (1942–1948): contribuições para o conhecimento da flora medicinal de Moçambique'. *História, Ciências, Saúde – Manguinhos*, 21(2): 539–85. <https://doi.org/10.1590/S0104-59702014000200007>
- Covane, L.A. (1996). 'Migrant labor and agriculture in southern Mozambique with special reference to the Lower Limpopo Valley 1920–1992'. Ph.D. thesis. University of London: Institute of Commonwealth Studies.
- Covane, L.A. (2020a). *As relações económicas entre Moçambique e a África do Sul, 1850-1964. Acordos e regulamentos principais*. 2nd Edition. Maputo: AHM.
- Covane, L.A. (2020b). *O impacto do trabalho migratório em Gaza: vozes de mineiros, suas esposas e autoridades locais*. Maputo: Universidade Nachingwea.
- Deepak, S., P.E. Hansine, and C. Braccini (2013). 'Self-care groups of leprosy-affected people in Mozambique'. *Leprosy Review*, 84(4): 283–91. <https://doi.org/10.47276/lr.84.4.283>
- Dias, J., and M. Dias (1998). *Os macondes de Moçambique I: aspectos históricos e económicos*. Lisbon: IICT.
- Dube, F. (2009). 'Colonialism, cross-border movements, and epidemiology: a history of public health in the Manica region of central Mozambique and eastern Zimbabwe and the African response, 1890–1980'. Ph.D. thesis. University of Iowa. <https://doi.org/10.17077/etd.aqkvoeea>
- Finnegan, W. (1992). *Mozambique: a complicated war*. London: University of California Press. <https://doi.org/10.1525/9780520342385>
- Garrido, I. (2020). 'Saúde, desenvolvimento e factores institucionais: o caso de Moçambique'. UN-WIDER Working Paper 2020/131. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2020/888-7>
- Gironés, A.L., F. Belvis, M. Julià, and J. Benoch (2018). *Desigualdades em saúde em Moçambique: necessidades, acesso, barreiras e qualidade de atendimento. Relatório técnico*. Barcelona: Medicus Mundi.
- Government of Mozambique (1973). 'Serviços de combate a lepra'. In *Arquivo Histórico de Moçambique*, Volume 20. Maputo.
- Government of Mozambique (2010). *Pobreza e bem-estar em Moçambique: terceira avaliação nacional*. Maputo: Ministério da Planificação e Desenvolvimento.
- Gradín, C. (2017). 'Desafios da desigualdade em Moçambique?: o que sabemos da desigualdade em Moçambique'. Thesis. Maputo: Universidade Pedagógica.
- Gradín, C., and F. Tarp (2019). 'Investigating growing inequality in Mozambique?'. *South African Journal of Economics*, 87(2): 110–38. <https://doi.org/10.1111/saje.12215>
- Grau-Pujol, B., et al. (2019). 'Frequency and distribution of neglected tropical diseases in Mozambique: a systematic review'. *Infectious Diseases of Poverty*, 8(103): 1–11. <https://doi.org/10.1186/s40249-019-0613-x>
- Griffiths, S., and N. Ready (2001). 'Defaulting patterns in a provincial leprosy control programme in Northern Mozambique'. *Leprosy Review*, 72: 199–205. <https://doi.org/10.5935/0305-7518.20010026>
- Gudo, S.E., F.P.J. Black, and J.L. Cliff (2016). 'Chikungunya in Mozambique: a forgotten history'. *PLOS Neglected Tropical Diseases*, 10(11): e0005001. <https://doi.org/10.1371/journal.pntd.0005001>
- Gwatkin D., et al. (2007). 'Socio-economic differences in health, nutrition and population: Mozambique, 1997–2003'. Washington, DC: World Bank. Available at: http://bvsper.paho.org/texcom/nutricion/Pnk_0507.pdf (accessed 1 February 2022).
- Gwatkin, D. (2000). 'Health inequalities and the health of the poor: what do we know? what can we do?'. *Bulletin of the World Health Organization*, 78(1): 3–18. <https://pubmed.ncbi.nlm.nih.gov/10686729/>

- Hanlon, J. (1991). *Mozambique: who calls the shots?* London: James Currey.
- Hanlon, J. (1997). ‘Como o FMI bloqueia a reconstrução de Moçambique’. Thesis. Maputo: Imprensa Universitária.
- Harries, P. (1994). *Culture and identity. migrant laborers in Mozambique and South Africa, c. 1860–1910*. London: James Currey.
- Hasnain, R., J. Queijo, S. Laher, and C. Sandahl (2020). ‘Islam, leprosy, and disability: how religion, history, art, and storytelling can yield new insights and acceptance’. *Societies*, 10(6): 6. <https://doi.org/10.3390/soc10010006>
- Hofrichter, R. (2003). ‘The politics of health inequalities: contested terrain’. In R. Hofrichter (ed.), *Health and social justice: politics, ideology, and inequality in the distribution of disease*, 1st Edition. San Francisco: Jossey-Bass.
- Honwana, A. (2003). *Espíritos vivos, tradições modernas: possessão de espíritos e reintegração social pós-guerra no sul de Moçambique*. Maputo: Promédia.
- Hurman, J.E.J. (1996). ‘Mkunya: an experiment in leprosy control’. *Leprosy Review*, 27(2). Available at: <http://leprev.ils.br/pdfs/1961/v32n2/pdf/v32n2a07.pdf> (accessed 4 May 2022).
- INLM (1934). *Serviços de saúde e higiene*. Maputo: Imprensa Nacional.
- Israel, P. (2020). ‘The Mueda massacre retold: the “matter of return” in Portuguese colonial intelligence’. *Journal of Southern African Studies*: 10009–36, online. <https://doi.org/10.1080/03057070.2020.1805854>
- Junod, H.A. (1996). *Usos e costumes dos Bantu*, Volume 2. Maputo: AHM.
- Kenneth, A. (2016). ‘Mediating the Lake Nyasa border dispute between Tanzania and Malawi’. MA Thesis. Johannesburg: University of Witwatersrand.
- Lavieque, J.P. (2020). ‘Discriminação étnica em moçambique: elo-base que exige eliminação para paz efectiva’. *Revista Relações Sociais*, 3(3): 224–50. <https://doi.org/10.18540/revsvl3iss3pp0224-0250>
- Liesegang, G. (1994). *Technology, space climate, and biology: the incidence and the impact of drought, famines, pests, epidemics, and wars in the history of Mozambique, c. 1515–1990*. Unpublished.
- Lockwood, D.N.J. (2004). ‘Commentary: leprosy and poverty’. *International Journal of Epidemiology*, 33(2): 269–70. <https://doi.org/10.1093/ije/dyh115>
- Macagno, L. (2019). *A invenção do assimilado. Paradoxos do colonialismo em Moçambique*. Lisbon: Edições Colibri.
- Machava, B. (2019). ‘Reeducation camps, austerity, and the carceral regime in socialist Mozambique, 1974–1979’. *Journal of African History*, 60(3): 429–55. <https://doi.org/10.1017/S0021853719001014>
- Machele, J. (2019). ‘Religion and development in Mozambique’. In M.C. Green (ed.), *Law, religion and human flourishing in Africa*. Stellenbosch: Conference-RAP, pp. 329–30. <https://doi.org/10.18820/9781928314592/20>
- Machele, S. (1971). ‘Our health service’s role in the revolution’. Speech at the beginning of a course for health cadres, November. Available at: <https://www.marxists.org/subject/africa/machel/1971/health-service.htm> (accessed 3 February 2022).
- Maia, C. (2012). ‘Understanding poverty and inequality in Mozambique: the role of education and labour market status’. Thesis. Faculty of Economic and Management Sciences, University of Stellenbosch.
- Maia, R. (2014). ‘Sobre a gestão do risco da epidemia de Ébola em Moçambique’. *Público*, 265(5).
- Marrega, A., et al. (2019). ‘Hansen’s disease deformities in a high risk area in Mozambique: a case study’. *Revista da Sociedade Brasileira de Medicina Tropical*, 52: online. <https://doi.org/10.1590/0037-8682-0103-2018>
- Martins, H. (1984). ‘Pharmaceutical policy in independent Mozambique: the first tears’. *IDS Bulletin*, 14(4): 62–70. <https://doi.org/10.1111/j.1759-5436.1983.mp14004010.x>

- Matsimbe, A.M., et al. (2017). 'Molecular detection of pathogens in ticks infesting cattle in Nampula Province, Mozambique'. *Experimental and Applied Acarology*, 73: 91–102. <https://doi.org/10.1007/s10493-017-0155-5>
- Medeiros, E. (1997). *Historia de Cabo Delgado e de Niassa*. Maputo: Central Impressora.
- Melamed, A. (ed.) (1984). *Mozambique: towards a people's health service*. London: Zed Books.
- Ministério da Saúde (2005). *Relatório do Inquérito Nacional sobre mapeamento da filaríase linfática em Moçambique*. Maputo: MISAU.
- Ministério da Saúde (2012). *Relatório de revisão do sector*. Maputo: MISAU.
- Ministério da Saúde (2015). *Análise da mortalidade nacional - Moçambique - SIS-ROH 2013*. Maputo: MOASIS & JEMBI.
- Mokake, F.M. (2018). 'Isolation, control and rehabilitation: a social and medical history of leprosy treatment and leproseria in Cameroon, 1916–1975'. Thesis. Ohio University.
- Moreira, A. (1961). *Política de integração*. Lisbon.
- Muchanga, E. (2018). 'Erradicação da lepra em Moçambique, uma tarefa complicada'. Available at: <https://envolverde.com.br/erradicacao-da-lepra-em-mocambique-uma-tarefa-complicada/> (accessed 4 February 2022).
- Mugabe, V.A., et al. (2018). 'Evidence for chikungunya and dengue transmission in Quelimane, Mozambique: results from an investigation of a potential outbreak of chikungunya virus'. *PLOS ONE*, 13(2): e0192110. <https://doi.org/10.1371/journal.pone.0192110>
- Mungoi, D. (2010). 'Identidades viajeiras, família e transnacionalismo no contexto da experiência migratória de moçambicanos para as minas da terra do RAND, África do Sul'. Thesis. Universidade Rio Grande do Sul, Porto Alegre.
- Nelson, O.C. (2018). 'Avaliação do tratamento massivo no controlo da filaríase linfática schistosomiase e das geohelmintíases no distrito de Murrupula e cidade de Nampula, Moçambique'. Thesis. Universidade Nova de Lisboa Instituto de Higiene e Medicina Tropical.
- Nutor, J.J., P.A. Duodu, P. Agbadi, O.H. Duah, K.E. Oladimeji, and K.W. Gondwe (2020). 'Predictors of High HIV+ prevalence in Mozambique: a complex samples logistic regression modeling and spatial mapping approaches'. *PLOS ONE*, 15(6): e0234034. <https://doi.org/10.1371/journal.pone.0234034>
- O'Laughlin, B. (2010). 'Questions of health and inequality in Mozambique'. *Cadernos IESE* 4. Maputo: IESE.
- Packard, R.M. (1989). *White plague, black labor: tuberculosis and the political economy of health and disease in South Africa*. Berkeley/Los Angeles: University of California Press.
- Palhota, M.A. (2012). 'Lepra em Namaíta, província de Nampula: uma reflexão sobre representações socioculturais'. Thesis. Eduardo Mondlane University, Maputo.
- Parkin, D. (2014). 'Pathways to healing: curative travel among Muslims and non-muslims in eastern East Africa'. *Medical Anthropology: Cross-Cultural Studies in Health and Illness*, 33(1): 21–36. <https://doi.org/10.1080/01459740.2013.775129>
- Pélissier, R. (1994). *História de Moçambique: formação e oposição, 1854-1918*. Lisbon: Editorial Estampa.
- Pfeiffer, J., K. Gimbel-Sherr, and O.J. Augusto (2007). 'The Holy Spirit in the household: Pentecostalism, gender and neoliberalism in Mozambique'. *American Anthropologist*, 109(4): 688–700. <https://doi.org/10.1525/aa.2007.109.4.688>
- Popay, J., G. Williams, C. Thomas, and A. Gatrell (2003). 'Theorizing inequalities in health: the place of lay knowledge'. In R. Hofrichter (ed.), *Health and social justice: politics, ideology, and inequality in the distribution of disease*, 1st Edition. San Francisco: Jossey-Bass, pp. 385–409.
- Quemo, C. (2012). 'O poder do poder: Operação Produção (1983) e a produção dos "improdutivos" urbanos no Moçambique pós-colonial'. *Cadernos de História de Moçambique*, 1: 65–81.

- Raimundo, I. (2009). 'Mobilidade da população, pobreza e feitiçaria no meio rural de Moçambique'. *Economia, Política e Desenvolvimento*, 1(1): 13–39.
- Rassi, C., et al. (2016). 'Have you heard of schistosomiasis? Knowledge, attitudes and practices in Nampula Province, Mozambique'. *PLoS Neglected Tropical Diseases*, 10(3): e0004504. <https://doi.org/10.1371/journal.pntd.0004504>
- Republic of Mozambique (2006). 'Action plan for the reduction of absolute poverty 2006–2009 (PARPA II)'. IMF Country Report. Washington, DC: IMF. Available at: https://planipolis.iiep.unesco.org/sites/default/files/ressources/mozambique_parpa_ii_2007.pdf (accessed 15 January 2022).
- Rita-Ferreira, A. (1967/68). 'Os africanos de Lourenço Marques'. In *Memórias*, 9: 95–491. Maputo: Instituto de Investigação Científica de Moçambique.
- Rogers, L., and E. Muir (1937). *Lepra*. Directoria de Saúde Pública do Estado de Minas Gerais.
- Roque, A.C. (2016). 'Doenças endémicas e epidémicas em Lourenço Marques no início do século XX: processos de controlo versus desenvolvimento urbano'. *Anais do Instituto de Higiene da Medicina Tropical*, 15: 167–74.
- Santos, J. (1999). *Etiópia oriental e vária história de cousas notáveis do Oriente*. Lisbon: Comissão Nacional para a Comemoração dos Descobrimentos Portugueses.
- Segall, M. (1977). 'Health and national liberation in the People's Republic of Mozambique'. *International Journal of Health Services*, 7(2): 319–25. <https://doi.org/10.2190/9VKC-MF5K-UJD2-5RAJ>
- Shapiro, M. (1983). 'Medicine in the service of colonialism: medical care in Portuguese Africa'. Thesis. University of California, Los Angeles.
- Silva, J.A. (2007). 'Trade and income inequality in a less developed country: the case of Mozambique'. *Economic Geography*, 83(2): 111–36. <https://doi.org/10.1111/j.1944-8287.2007.tb00339.x>
- Sitoe, E. (2020). 'Medicinal ethnobotany of Mozambique: a review and analysis'. Thesis. University of Johannesburg.
- Soderbaum, F., and I. Taylor (eds) (2008). *Afro-regions: the dynamics of cross-border micro regionalism in Africa*. Uppsala: The Nordic Africa Institute.
- Solomon, R., R. Sundar, and G.C. Karthikeyan (2020). 'Socio-medical perspectives on leprosy in Indian religions'. *Leprosy Review*, 91(2): 191–99. <https://doi.org/10.47276/lr.91.2.190>
- Spence, C.F. (1963). *Moçambique (East African Province of Portugal)*. Cape Town: Howard Timmins.
- Stuip, Y., C.H. Phaff, and M. Akker (2003). 'Patient characteristics & treatment outcome in active and passive case finding of leprosy: a retrospective cohort study in the province of Niassa, Mozambique'. *Arch Public Health*, 61: 127–39.
- Thompson, E.P. (1993). *The making of the English working class*. Harmondsworth: Penguin.
- Traquinho, G.A., L. Quintó, R.M. Nalá, R.G. Vaz, and M. Corachan (1998). 'Schistosomiasis in northern Mozambique'. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 92(3): 279–81. [https://doi.org/10.1016/S0035-9203\(98\)91011-2](https://doi.org/10.1016/S0035-9203(98)91011-2)
- Valdiki, M. (1966). *África jovem história, economia, usos e costumes, cooperativismo*. Rio de Janeiro: Cooperativa Cultural Esperantista.
- Vaughan, M. (1991). *Curing their ills: colonial power and African illness*. Stanford, CA: Stanford University Press.
- Vines, A. (1996). *Renamo: from terrorism to democracy in Mozambique?* London: James Currey.
- Vletter, F. (2006). *Migration and development in Mozambique: poverty, inequality and survival*. Cape Town: Southern African Migration Project.
- Walt, G., and J. Cliff (1986). 'The dynamics of health policies in Mozambique, 1975–85'. *Health Policy and Planning*, 1(2): 148–57. <https://doi.org/10.1093/heapol/1.2.148>

- WHO (2008). 'Global leprosy situation, beginning of 2008'. *Weekly Epidemiological Record*, 33, 15 August. Geneva: World Health Organization.
- WHO (2010). 'Relatório do Biênio 2008-2009'. Geneva: World Health Organization. Available at: <https://www.afro.who.int/sites/default/files/2017-06/Relatorio-Bienio-2008-2009.pdf> (accessed 4 February 2020).
- Wiegert, S.L. (1996). *Traditional religion and guerrilla warfare in modern Africa*. New York: St. Martin's Press. <https://doi.org/10.1057/9780230371354>
- Zamparoni, Z. (2017). 'Lepra: doença, isolamento e segregação no contexto colonial em Moçambique'. *História, Ciências, Saúde - Manguinhos*, 24(1): online. <https://doi.org/10.1590/s0104-59702016005000028>