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Tracing the imperial roots of cassava in Mozambique: production, trade and consumption of a food commodity

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Drawing upon qualitative analyses of Portuguese sources, this article explores the cassava trajectory in modern-day Mozambique between the mid-18th and mid-19th centuries within the framework of the trans-imperial networks in the Indian Ocean World. It begins by addressing the possible routes of introducing the plant across Mozambique's territory and the colonial policies aimed at making its cultivation mandatory. It demonstrates how this process unfolded amidst intense conflicts between the Portuguese colonial administration and the landholders, while the Africans resisted consuming cassava. Then, it analyzes the systems for growing cassava in plantations and processing the root for consumption, from flour mills to sun-drying techniques, using slave labour. Finally, it argues that cassava production was initially based on supplying the army and only later was driven by the slave trade, thus demonstrating the role this food commodity played in building the Portuguese empire in the Indian Ocean.

Traçar as origens imperiais da mandioca em Moçambique: produção, comércio e consumo de uma mercadoria alimentar

PALAVRAS-CHAVE: **mandioca, tráfico de escravos, Moçambique, Oceano Índico.**

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Baseando-se na análise qualitativa de fontes portuguesas, este artigo explora a trajectória da mandioca em Moçambique, entre meados do século XVIII e meados do século XIX, no contexto das redes transimperiais do Oceano Índico. Aborda as possíveis rotas de introdução da planta no território e as políticas coloniais no sentido de tornar o seu cultivo obrigatório, demonstrando como esse processo decorreu por entre uma intensa conflitualidade entre a administração colonial e os senhores de terras, enquanto os africanos resistiam ao seu consumo. De seguida, analisa os sistemas de cultivo em plantações e de transformação da raiz para consumo, desde os engenhos de farinha à secagem das raízes ao sol, usando trabalho escravo. Finalmente, argumenta que a produção de mandioca se baseou, inicialmente, no abastecimento ao exército e apenas posteriormente foi impulsionada pelo tráfico de escravos, evidenciando, assim, o papel desta mercadoria alimentar na construção do império português.

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1. INTRODUCTION

On 16 August 1768, the Governor-General of the Portuguese colony of Mozambique, Baltazar Pereira do Lago (1765-1779), sent an enthusiastic report to Lisbon about the "discovery of cassava". The plant was first identified among the vegetation of Mozambique Island by a crew member of a ship from Brazil[1]. From that moment on, cassava spread throughout the territory of modern-day Mozambique, becoming a staple food in most of the country, albeit with regional variations. The plant acquired significant material and symbolic value, serving as the foundation for a rich cuisine and the production of beverages. Furthermore, it became associated with medicinal uses and ceremonies that are integral to social life (Domingos, 2016; Gengenbach, 2019).

Cassava (*Manhiot esculenta* Crantz) is one of the species of the "American complex" transplanted to Africa (Crosby, 1972). The domestication of the plant and the techniques for processing its root originated in Central America and Northern Brazil before spreading worldwide (Jones, 1959; Cascudo, 1967; Crosby, 1972; O'Connor, 2013). This shrub adapts well to various soil types, including poor soils and can withstand climatic variability, while resisting pests. It is mainly the root that is used as a foodstuff, offering high carbohydrate value, although with low levels of protein and amino acids. There are two varieties of cassava: bitter cassava, which is toxic due to its high prussic or hydrocyanic acid content, and sweet cassava which has a lower concentration of this acid. The bitter cultivars can remain underground for more than the twelve to eighteen months they take to mature and need to be processed to eliminate the acid. In contrast, sweet cassava is harvested after six to nine months of growth and can be consumed raw[2]. Based on the technology developed by the Tupi-Guarani to produce flour from the root, this *farinha de pau* (literally "wood flour") or cassava flour was soon embraced by the Portuguese in Brazil in a wide variety of recipes, enabling the daily survival of the colonists, the armies and the enslaved people. Cassava flour was likewise used to provision the vessels that called in at ports in Brazil, as well as the ships involved in the slave trade between Africa and the Americas from the 16th century (Jones, 1959; Miller, 1988; Alencastro, 2000; Rodrigues, 2017; O'Connor, 2013; Carney & Rosomoff, 2011). "They [the slaves] were eating cassava even before they set foot in Brazil", stated Cascudo (1967: v.1, 95).

1. Arquivo Histórico Ultramarino, Lisbon (AHU), cód. 1325, fls. 296v-298v, "Carta de Baltazar Pereira do Lago", 16/08/1768.

2. The difference between bitter and sweet cassava is not associated with botanical varieties, but with the fact that the acid content varies according to the soil, humidity, temperature, and age of the plant (Jones, 1959).

Scholarship has associated the introduction of cassava in Atlantic Africa with the provisioning of slave trading ships (Jones, 1959; Crosby, 1972; Hillocks, 2002; Carney & Rosomoff, 2011). However, Vansina (1997) argues that the earliest information on cassava being cultivated in West Central Africa described it as food for Europeans, while flour was imported from Brazil to sustain the enslaved people during their maritime journeys. Cassava began to be planted along the coasts of Kongo and Angola in the early 17th century[3]. Its cultivation increased during the 18th century and, at this stage, it became a significant crop in Kongo. With the Imbangala expansion from the 1650s, the plant spread toward Lunda (Jones, 1959; Vansina, 1997; Alencastro, 2000). Further north, the shrub was taken to the south of Gabon and the Niger Delta during the 17th century. Yet, it spread in Dahomey only in the 19th century when erstwhile enslaved individuals returned from Brazil (Alpern, 1992; Juhe-Beaulaton, 2014).

Research on the dissemination of cassava in East Africa, including Mozambique, is fragmented. Scholarship suggests that the plant was brought to the Indian Ocean by either the French or the Portuguese, or it may have reached East Africa via mainland routes, passing through Kongo. Most scholars agree that cassava was initially cultivated by the French on the Mascarene Islands in the 1730s and subsequently spread to other islands in the Indian Ocean and to East Africa (Jones, 1959; Konczacki & Konczacki, 1977; Boomgaard, 2003; Hillocks, 2002; Ellen *et al.*, 2012). In turn, Strandes (1968) and Karasch (2000) claim that the Portuguese took cassava from Brazil to the shores of East Africa in the mid-18th century, from where the plant expanded to other regions of the Indian Ocean. The alternative Kongo route, which proposes that the shrub was disseminated from the coast of West Central Africa to the East, appears to have less support (Purseglove, 1968). Furthermore, there is a scholarly consensus that the plant only began to expand in East Africa from the 19th century onwards, particularly during the 20th century, when colonial powers promoted its cultivation as a safeguard against famine (Jones, 1959; Hillocks, 2002; Lancaster *et al.*, 1982). The discussion regarding the role Mozambique played in the Indian Ocean cassava routes is primarily based on these comprehensive studies, which point out that the introduction of cassava into Mozambique by the Portuguese colonial authorities was intended to provision the slave trade, as Serra (1982) also contends.

To place this nowadays important plant in Mozambique within the context of global foods debates and its relevance in building European empires (Curry-Machado, 2013), this paper draws on Portuguese sources to analyse the spread of cassava throughout the

3. However, Jones posits an earlier introduction date. The plant must have been introduced in São Tomé and Príncipe around the same time (Jones, 1959; Hillocks, 2002).

region, emphasising the role this tuber played in bolstering the Portuguese empire in the Indian Ocean. Identified on Mozambique Island in 1768, cassava quickly became a commodity within the regional and trans-imperial trading networks that entangled the Portuguese and other European empires. The first two sections examine the potential routes through which cassava was introduced and how it expanded as a compulsory crop across the territory of Mozambique, showing that this process occurred amid intense conflicts between the colonial administration and landholders, while the African population resisted adopting this new food. The third section analyses the cultivation systems for the tuber on plantations and its processing for consumption, following the circulation of knowledge and technologies throughout the Portuguese empire. It demonstrates that cassava production relied on the employment of enslaved labour. The final section discusses how cassava evolved into a commodity. Contrary to a prevalent idea in the scholarship about the dissemination of the plant in Mozambique, this paper argues that cassava was initially cultivated as a food source for the colonial army and only later, up until the mid-19th century, it gained momentum through the slave trade.

2. FROM *MUJAO YAMS* TO CASSAVA

In the second half of the 18th century, the Portuguese colony of Mozambique comprised some territories along the coast: Mozambique Island and its adjacent mainland, the *terra firme*; the Quirimbas archipelago to the north; Sofala, Inhambane and Lourenço Marques (Maputo) to the south; and the vast inland area of the Rios de Sena around the Zambezi River, divided into the districts of Quelimane, Sena and Tete and the fairs at Manica and Zumbo. Apart from Africans – both free and enslaved – the colony had a diverse population of inhabitants, including settlers or *moradores* who had been born in the colony, in Portugal or *Estado da Índia* (primarily Catholics from Goa), and, finally, Hindu merchants from Gujarat (Newitt, 1995; Rodrigues, 2013).

Supplying provisions to the colony had proven difficult since the 16th century, although with regional and chronological fluctuations. Africans primarily consumed cereals such as *mapira* or sorghum (*Sorghum* sp.), *meixoeira* or bulrush millet (*Pennisetum* sp.) and *nachenim* or finger millet (*Eleusine coracana*, Gaert), while Europeans and Indians preferred wheat and rice (Rodrigues, 2014). Shortages of grains arose due to climate variations, resulting in periods of drought or flooding, plagues of insects that devastated crops and epidemics such as smallpox that affected farming labour. Recurring military conflicts with African chiefs likewise significantly impacted the production and circulation of foodstuffs. The Zambezi Valley, where the Portuguese Crown dominated vast lands granted to its subjects (*prazos*), was less reliant on external supplies than the small enclaves and

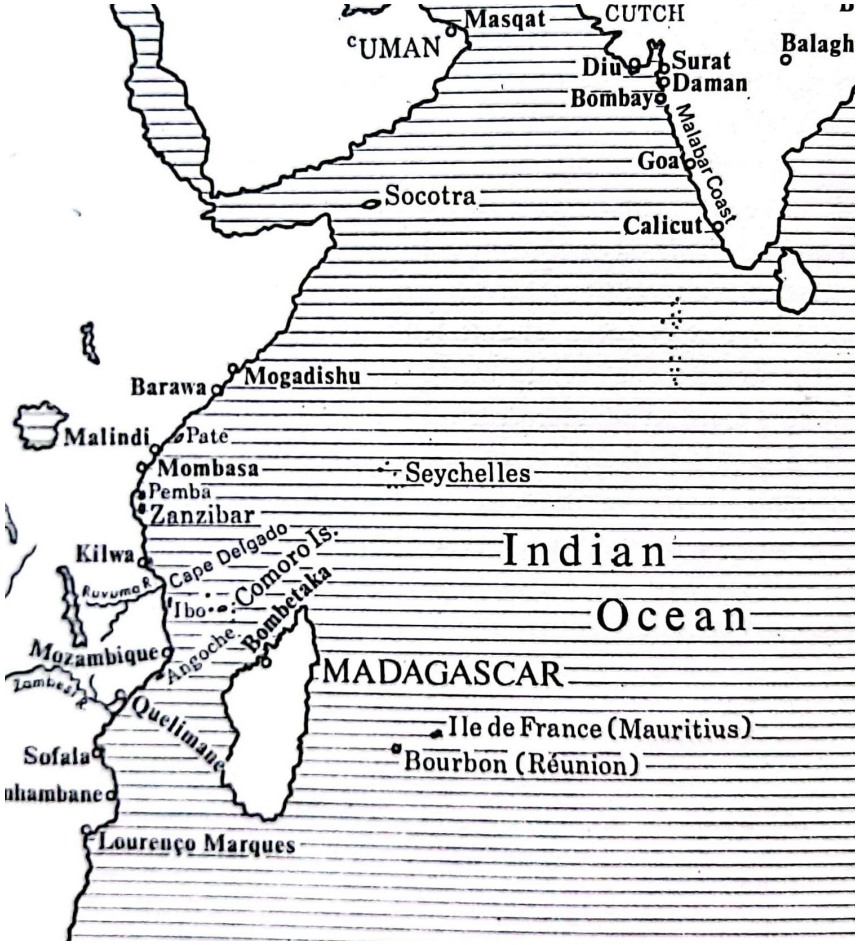
islands along the coast. On the *prazos*, which constituted a means of administration of the territory and its African populations, estate-holders only promoted agriculture in the small plots around their residences, leaving the production of provisions to free Africans, from whom they collected tributes in kind[4].

The situation was particularly critical on Mozambique Island, where the capital was located, and it thus was under greater pressure due to the large numbers of officials and troops, as well as passengers and crews from the ships that called in at the port. The island's settlers owned land estates along the seashore in Cabaceira Pequena, Cabaceira Grande and Mossuril, which were worked by slaves, mainly women (Bastião, 2020). These estates encompassed palm groves (*palmares*), consisting primarily of coconut trees, and fields known as *machambas*, where cereals and vegetables were grown. However, the *machambas* produced only small quantities of rice and no wheat, the staple foodstuffs that European and Indian settlers used as part of their cultural preferences. Moreover, the local production was insufficient to feed the resident population, let alone the influx of people arriving from Europe every monsoon when the ships sailing to India or other Indian Ocean ports anchored there (Newitt, 1995). The increase in slave trading from the late 18th century further intensified the demand for supplies (Alpers, 1975; Capela, 2002; Allen, 2014). In this framework, the island depended heavily on provisions imported from neighbouring polities, following extensive negotiations with Swahili and Makua chiefdoms (Mbwiliza, 1991; Hafkin 1973), as well as from wider trading networks in the Indian Ocean, which included other districts of the colony, as well as India, Madagascar, Comoro Islands and the Mascarenes (Alpers, 1975, 2009; Newitt, 1995) (see Map 1). Thus, just like other maritime cities, Mozambique Island relied on what Alpers (2009: 24) dubbed the "regional food network of the Western Indian Ocean". Through this network, the island's population obtained cereals, meat, and other foods. For instance, in 1802, it was calculated that the island imported 3,000 *alqueires* of provisions from Rios de Sena and 500 from Sofala, while 9,470 came from other Indian Ocean ports[5].

4. From the standpoint of Portuguese law, the *prazos* grant combined the emphyteusis with the donation of Crown assets rewarding services. The Crown retained the direct domain on the land while the grantee received the useful domain with the obligation to pay an annual quitrent and provide certain duties service. The estate-holders had the power to administer the African populations and collect taxes from them. This European normative regime mingled together with local institutions (on *prazos*, see Isaacman, 1972; Newitt, 1995; Rodrigues, 2013; Serrão & Rodrigues, 2017).

5. AHU-Moçambique, cx. 93, doc. 97, "Carta de Isidro Sousa e Sá", 25/07/1802. *Alqueire* was a Portuguese measure of capacity used for grains equivalent to 13,9 liters.

MAP 1
The Western Indian Ocean



Source: Alpers (1975).

Overcoming the difficulties of provisioning required a capacity within the colonial administration to match the sources of external food supplies. Apart from ensuring commercial balance to meet the needs of the population, the government was directly responsible, through the Royal Warehouses, for providing rice to the army, the hospital and the crews of the carracks that stopped at the island en route between Lisbon and Goa, the capital of the Portuguese state of India. Within this framework, the prospect of cultivating cassava, which had proven to be extremely helpful in Portuguese America, offered hope for resolving the issue of subsistence in Mozambique. According to the governor-general, the roots of the plant "discovered" in 1768 were already being used by the "more rustic kaffirs

[cafres], during years of locust plagues and smallpox"[6]. Hence, cassava was consumed by Africans around Mozambique Island as food collected in forests in years of scarcity even before the plant was botanically identified. The governor further stated that the root was eaten either boiled or roasted, which suggests that it was the sweet variety of cassava.

However, how did the American plant become a forest food on Mozambique's seashore? The governor also mentioned that the shrub was known as *Mujao yam,* a reference to the Yao people who controlled the ivory trading routes from Lake Nyasa and came to Mozambique Island every year (Alpers, 1975). It is possible that the Yao knew the plant's feeding uses through the mercantile networks that connected the northern reaches of the Zambezi River and Kazembe (modern Zambia), where cassava disseminated from West Central Africa. Indeed, some years later, in 1798, the Portuguese expedition that attained Kazembe found that cassava was a "daily staple foodstuff"[7] there, which was confirmed during another journey in 1831-1832 (Gamitto, 1854). Almeida (2012: 640), who commanded the first expedition, added that the merchants of Kazembe used to take along with them "the whole roots and they would use them as the need arose". When the British explorer David Livingstone (1875: 71) crossed the Yao country in 1866, he found abandoned fields of cassava at Mwembe, the capital of the Mataka state: "Cassava is cultivated on ridges along all streets in the town, which give it a somewhat regular and neat appearance". Yao oral traditions recorded in the early 20th century also show the practice of planting cassava fields in establishing new villages (Abdallah, 1973: 21-2). It is possible that Yao traders acted as intermediaries spreading the plant from inland Africa or found it along the coast of Mozambique Island, where it could have arrived from the Indian Ocean. In any case, the label "Mujao yam" – identifying it with the name of a known root and simultaneously showing a difference from yam[8] – suggests that the Yao played a prominent role in spreading the American root before the Portuguese identified it.

The alternative route through which cassava reached East Africa via the Indian Ocean considers the role played by the Portuguese, which does not seem to be documented, or that of the French. Indeed, Governor Mahé de La Bourdonnais of the Mascarene Islands (1735-1746) launched the cultivation of cassava on Île de France (Mauritius) to provide sustenance to the enslaved individuals working on the plantations (Kull *et al.*, 2015). However, it is improbable that the crop had been introduced in the Mascarenes in the

6. AHU, cód. 1325, fls. 296v-298v, "Carta de Baltazar Pereira do Lago", 16/08/1768. The Portuguese employed the term *cafre* for Africans living along the coast of East Africa, based on the Arab word *kaffir* used to designate non-Muslims.

7. AHU-Moçambique, cx. 81, doc. 108, "Carta do P. e Francisco João Pinto", 30/12/1798.

8. In Brazil, Portuguese often described cassava as a tuber similar to yams (Cascudo, 1967).

1730s, as most literature claims. It was during La Bourdonnais's return journey from France to Mauritius in 1741 that he anchored his fleet at Ilha Grande (Rio de Janeiro, Brazil), where he witnessed the slaves being nourished with cassava. Recognizing the plant as a solution to the food shortages in the Mascarenes, caused by frequent hurricanes and locust infestations that destroyed crops, the governor acquired some plants during this voyage (La Bourdonnais, 1827: 16-7, 44; Pitot, 1899: 38-9) or, more likely, ordered them to be taken from Santiago Island in Cape Verde. Indeed, in 1742, shortly after arriving at Île de France, Baron Grant (1801: 199-209) learned that the captain of the ship he travelled on, the *Hercule*, had been instructed to load cassava plants from Santiago.

According to some scholars, cassava reached Mozambique through the slave trading routes from the French colony (for example, Serra, 1982). However, Friar João de Santa Ana reported that around 1782 he met in Aceh (Sumatra) the Frenchman Hyacinthe La Haye, who had travelled on one of the ships from the 1744 fleet, dispatched by the French Crown to the Indian Ocean to combat the British. La Haye stated that the vessel was carrying cassava for the Mascarenes and had called in at Mozambique where, "fearing that they would not be able to reach Mauritius, where they were taking the plants by royal order, they discreetly unloaded them in that place"[9]. This appears to be the only evidence concerning the French role in introducing cassava to Mozambique, not from the Mascarenes but directly from the Atlantic, probably from Brazil or Cape Verde. At least in 1776, new specimens were imported from Brazil on the vessel *Conceição Flor do Mar* (Gama, 1859: 24). Other shrubs were likely brought from Mauritius or Brazil, within the context of slave trading routes. In short, the specific path through which cassava reached Mozambique remains uncertain, but historical records confirm its presence before 1768. Existing evidence indicates that the plant may have been brought through trade networks linking the African interior to the Indian Ocean by Yao merchants or, alternatively, the French might have introduced it via maritime routes.

3. SPREADING CASSAVA IN MOZAMBIQUE

Cassava soon began to be depicted by the Portuguese administration as a solution to the subsistence challenges in Mozambique. First, cassava yielded a ten times greater harvest than cereals used as main staples in East Africa. Second, unlike African and European grains, the tuber was resistant to the vagaries of the climate and predators and could be stored underground for extended periods, while the flour remained fresh for a long

9. Biblioteca Nacional de Portugal, Lisbon, Reservados, cód. 11.550, Fr. João de Santa Ana, "Escuridades Ethiopicas", 15/12/1786.

time. Third, the colonial authorities believed cassava offered superior nutritional value compared to the ordinary diet in Mozambique, being the healthiest form of sustenance for tropical climates, purportedly due to the "quality of its gum"[10]. Against this backdrop, colonial administrators pursued a policy encouraging cassava cultivation, which Governor-General Baltazar Pereira do Lago initiated. The governor aimed to ensure food self-sufficiency for Mozambique Island. He then intended to reduce the financial burden of sustaining the military regiment by partially substituting rice with cassava flour. At that time, one *alqueire* of rice cost 2,000 *réis*, while the governor believed he could buy cassava flour for 300 *réis*[11]. Finally, Lago wished to decrease the use of textiles for acquiring provisions and instead allocate them to purchase ivory, the main commodity in the region[12]. Indeed, cassava cultivation was not introduced into Mozambique due to the slave trade, as Serra (1982) argues, although it did subsequently contribute toward sustaining this trafficking. As in the case of Mauritius, the settlers in Mozambique did not deem the benefits of cassava with the same enthusiasm as the governor[13]. Following in the footsteps of La Bourdonnais, Pereira do Lago decreed in 1769 the compulsory cultivation of the plant, assigning the city council the tasks of monitoring the crops and punishing the transgressors with fines and imprisonment[14]. This decree encountered great resistance, leading to the arrest of important landholders, "who seek the liberties of traders for the benefit of their idleness, and do not wish to be subjected to any task that is useful for this state"[15]. Indeed, trade was the primary activity for the settlers, who saw cassava cultivation as diverting their slaves away from business operations. Staunchly opposing the governor's decrees, the *moradores* lodged strong complaints with the government in Lisbon[16].

10. AHU, cód. 1348, fls. 69-70, "Carta de Francisco Meneses da Costa", 10/08/1801. See also cód. 1332, fls. 97v-99v, "Alvará de Baltazar Pereira do Lago", 12/04/1769; cód. 1349, fl. 73-73v, "Carta de Francisco Menezes da Costa", 28/01/1799.

11. AHU, cód. 1325, fls. 296v-298v, "Carta de Baltazar Pereira do Lago", 16/08/1768.

12. AHU-Moçambique, cx. 29, doc. 54, "Carta de Baltazar Pereira do Lago", 10/08/1769. See also Mbwiliza (1991).

13. AHU-Moçambique, cx. 29, doc. 54, "Carta de Baltazar Pereira do Lago", 10/08/1769; AHU, cód. 1332, fls. 110-111, "Portaria de Baltazar Pereira do Lago", 15/06/1773; "Atestação passada por João Francisco Delgado", 23/06/1773.

14. AHU, cód. 1332, fls. 97v-99v, "Alvará de Baltazar Pereira do Lago", 12/04/1769. For Île de France, see Grant (1801: 199-200, 465) and Pitot (1899: 38-9).

15. AHU-Moçambique, cx. 29, doc. 54, "Carta de Baltazar Pereira do Lago", 10/08/1769.

16. AHU, cód. 1332, fls. 102-102v, "Portaria de Baltazar Pereira do Lago", 15/06/1773; "Certidão passada pelo Senado da Câmara de Moçambique", 19/06/1773; fl. 110, "Portaria de Baltazar Pereira do Lago", 15/06/1773; fls. 110-111, "Atestação passada por João Francisco Delgado", 23/06/1773.

Shortly after, in the wake of an epidemic of smallpox, Lago attempted to extend cassava farming throughout the colony. Following the example of legislation underwriting estate owners in Brazil (Rodrigues, 2017), a decree from 1770 guaranteed three-year exemptions for debtors who cultivated 4,000 plants yearly, excluding obligations to the royal treasury and charitable. The measure targeted Christians, Muslims, and Hindus, ensuring that slaves would not be seized for debts. Landholders who planted an additional 2,000 plants also received 40,000 *réis*[17]. Despite opposition from landholders to these decrees, in 1779, the new governor stated that: "Vast quantities of cassava have been planted, it is better than the cassava grown in America"[18]. The policy of fiscal incentives was maintained by Governor-General Pedro Saldanha de Albuquerque, who, in 1782, decreed exemptions from paying the tenth-share owed to the Crown during the first three years for plantations on *terra firme*[19].

Cassava was also disseminated through other territories under the rule of the Portuguese Crown owing to colonial policy. The plant was likely introduced to the Zambezi Valley by the Governor of the Rios de Sena António de Melo e Castro (1780-1786), who further promoted its cultivation during his tenure as governor-general (1786-1793). Castro had been exiled to Angola, where cassava was a well-established crop (Candido, 2013; Oliveira, 2021), and he was yet another administrator who was excited about the purported fertility of the lands in Rios de Sena. Foreseeing future colonial ventures, his plan to launch cash crops, based on producing sugar for Gujarat and Cambay and cotton for China and Europe, required African labour, which could be freed from planting cereals through a diet based on a low-labour crop[20]. Cassava fields were already cultivated in the 1780s on some *prazos* located on the right bank of the Zambezi River, such as Mulambe, Caia, Inhacatondo and Zomba[21].

In this endeavour, new administrative measures were taken shortly after. In 1795, in the framework of another provision's shortage, the Governor of Rios de Sena João de Sousa e Brito issued a directive for settlers to plant cassava. Those settlers who did not

17. AHU, cód. 1335, fls. 196-197v, "Alvará de Baltazar Pereira do Lago", 10/10/1770.

18. AHU-Moçambique, cx. 30-A, doc. 51, "Carta do governo interino", post. 14/08/1779.

19. AHU-Moçambique, cx. 41, doc. 53, "Portaria de Pedro Saldanha de Albuquerque", 27/03/1782.

20. AHU, cód.1358, fls. 79v-81v; 91v-92v, "Cartas de António de Melo e Castro", 03/12/1787 and 15/11/1788.

21. AHU-Moçambique, cx. 56, doc. 1, "Relação da João Fernandes do Rosário", 08/01/1788; doc. 76, "Relação de Manuel Estácio da Ponte Pedreira", 05/01/1788; "Relação de D. Maria Sofia Cabral de Abreu", 24/01/1788; AHU, cód. 1358, fls. 117v-118, "Carta de António de Melo e Castro", 29/05/1791; AHU-Moçambique, cx. 69, doc. 54, "Carta de Cristóvão de Azevedo e Vasconcelos", 17/12/1794.

possess land were instructed to mark out cassava fields on the *prazos* and were granted a waiver from paying rent to the estate-holders for the initial three years. The municipalities were responsible for supervising the enforcement of this legislation. Non-compliance was subject to fines and, for *prazo*-holders, could result in the confiscation of lands[22]. The powerful *prazo*-holders were even more independent than their counterparts on Mozambique Island, thus it appears that they overlooked the governor's order. Little progress was made and, in 1798, Governor Francisco Lacerda e Almeida asked the Portuguese Crown to send experts from Brazil[23]. Shortly thereafter, Governor-General Isidro Sousa e Sá emphasized the directive to increase cassava cultivation to the newly appointed Governor of the Rios de Sena António Barbosa Truão[24]. According to Truão (1857), the estate-holders proved slight interest in growing the crop. They only planted cassava for their own consumption, while choosing to import flour from Mozambique Island. Truão (1889) sought to persuade them by setting an example, starting a large plantation with 58,320 shrubs in Jutiaufa, north of Tete, on the left bank of the Zambezi. By 1821, a significant increase in crop cultivation was observed, with the production of some flour already underway in Sena and Tete[25]. The British explorers who arrived in the Zambezi shortly afterward highlighted the progress achieved: "Cassava produces abundantly, yet it is cultivated only at Tete" (Boteler, 1835: 299).

Thus, the dispersion of cassava in the Zambezi Valley occurred owing to colonial policy and the pressure the administration placed on the settlers, who, despite initial resistance, started to cultivate the crop for their consumption and to feed their slaves. However, the majority of agricultural activities on the *prazos* were primarily driven by the free Africans, who demonstrated a stronger resistance to shifting their farming systems and foodways, compared to the enslaved Africans along the coast of Mozambique Island. In Rios de Sena, the diet was based on grains such as sorghum, bulrush millet and finger millet, along with beans, corn, and rice, while roots were secondary or alternative foodstuffs (Truão, 1889: 12, 19, 27; Bordalo, 1859: 250)[26]. Against this background, a *prazo*-holder, Caetano Azevedo e Vasconcelos, stated that he sought to plant cassava to "open the eyes of these kaffirs that cassava is very useful for sustenance"[27]. The experi-

22. AHU-Moçambique, cx. 70, doc. 3, "Bando de João de Sousa e Brito", 03/01/1795; cx. 72, doc. 108, "Carta do Senado da Câmara de Tete", 08/01/1795.

23. AHU-Moçambique, cx. 80, doc. 86, "Carta de Francisco Lacerda e Almeida", 22/01/1798.

24. AHU, cód. 1306, fls. 69v-74v, "Instrução de Isidro Sousa e Sá", 24/10/1803.

25. Biblioteca da Ajuda, Lisbon (BA), cód. 52-X-2, José Alves Barbosa, "Analyse Statistica, Topografica, e Politica da Capitania dos Rios de Senna", 1821.

26. Vansina (1997) offers a similar perspective in relation to Angola.

27. AHU-Moçambique, cx. 69, doc. 54, "Carta de Cristóvão de Azevedo e Vasconcelos", 17/12/1794.

ence of intoxication, due to the poison not being removed from the root, also played a role in the African resistance to cassava, as a governor mentioned: "The kaffir settlers still disdain this plant, but as soon as it is used more extensively among the slaves of white settlers, they will soon lose their terror of being poisoned by this crop, as they think"[28].

Further north, on the Quirimbas Islands, Portuguese commanders began trialling cassava planting in the 1780s, once again to feed the soldiers. Yet these were isolated experiments since soldiers in the archipelago were local people more resistant to changes in their foodways than those on Mozambique Island[29]. Even the settlers opposed the new crop, claiming a lack of capital to invest in the estates[30]. Finally, in the early 19th century, cassava was planted on Ibo Island and attempts were made to extend its cultivation to Amiza[31]. South of the Zambezi River, only in 1798 the captain of Inhambane started to grow the tuber, having been instructed to supply flour to the soldiers, even paying higher prices than usual, to encourage the dissemination of the plant[32].

The slow expansion of cassava in territories under Portuguese rule outside Mozambique Island can be explained by the fact that, despite food crises, there was no recurrent food deficit in these areas as there was on Mozambique Island. Access to local cereals made it unnecessary to seek out nourishment alternatives apart from the forest foods that usually matched or replaced them during food emergencies. Furthermore, the Portuguese administration's control there was much weaker, and officials did not have the coercion tools enforced in the capital. Thus, only the food crises that arose from the late 18th century favoured the spread of cassava cultivation. Therefore, the plant dissemination throughout Mozambique occurred in a discontinuous way, initially being constrained to territories under colonial administration, which were themselves interpolated. By the mid-19th century, the crop was firmly established along the coast opposite Mozambique Island, where settlers were dedicated to "growing and processing cassava flour, which has no equal" (Botelho, 1835: 336, 352) and it was already one of the main crops in Inhambane (1835: 99); in the Zambezi Valley, some *prazo*-holders produced a

28. BA, cód. 52-X-2, Barbosa, "Analyse Statistica", 1821. The denomination *kaffir settlers,* or *colonos cafres* in Portuguese, refers to the category of free Africans living on the Zambezi Valley *prazos*.

29. AHU-Moçambique, cx. 44, doc. 43, "Carta de António de Paiva Pinto", 24/11/1783; cx. 55, doc. 90, "Carta de Manuel António Correia", 25/12/1787; AHU, cód. 1452, fls. 117v-118, "Carta de António de Melo e Castro", 08/01/1788; AHU-Moçambique, cx. 90, doc. 14, "Carta de António da Silva Pinto", 05/11/1801.

30. AHU-Moçambique, cx. 70, doc. 29, "Carta do comandante de Querimba", 16/02/1795; cx. 90, doc. 14, "Carta de António da Silva Pinto", 05/11/1801.

31. AHU-Moçambique, cx. 104, doc. 51, "Carta de Rodrigo Berri", 15/12/1803.

32. AHU, cód. 1349, fl. 73-73v, "Carta de Francisco Menezes da Costa", 28/01/1799.

significant amount of cassava and already exported it to Mozambique Island, but it was generally "disdained" (Botelho, 1835: 272, 276-86; Gamitto, 1854). Some cassava was grown in the Quirimbas Islands, while the crop was cultivated "as a hobby" in Sofala (Botelho, 1835: 187, 198).

Cassava took even longer to spread to other regions of modern Mozambique. However, some African polities appropriated the plant and began to cultivate it on their initiative. Around 1822, the Swahili sheikdoms bordering the *moradores*' plantations on *terra firme* were already incorporating cassava into their farming systems[33]. North of the Zambezi River, in the 1830s, the Maravi maintained "insignificant" fields of cassava (Gamitto, 1854: 72). In the mid-19th century, chiefdoms around Inhambane also established the crop (Bordalo, 1859: 269). Indeed, the slow dispersion of cassava in Mozambique reveals, as Ellen *et al.* (2012: 160) highlight for other regions, "how an early introduction is not automatically followed by further dispersion in the immediate vicinity". Outside of the areas that directly interacted with the Portuguese, and probably through independent circulation networks, only the Yao country had extensive cassava fields, as witnessed by Livingstone (1875: 71).

4. PRODUCING AND CONSUMING CASSAVA

Despite the underlying conflicts, the negotiations between the colonial administration and social actors ultimately led to the creation of a market for cassava, especially on Mozambique Island, which served as a powerful incentive to overcome the landholders' resistance to cultivating the plant. Highlighting the importance of the new crop was the fact that, from around 1780, all reports on agriculture in the colony lamented its overall "decadence" but underlined the development of cassava fields. From a Eurocentric perspective, this crop was considered the only notable branch of agriculture since it depended directly on the colonists whereas the production of cereals was essentially driven by African initiative. By 1802, a governor emphasised cassava as the main produce grown on the *ferra firme*: "The most productive crop there is cassava, which is known as *farinha de pau*"[34]. Another ruler, while criticising the state of agriculture in the colony because the landholders followed "the kaffirs" styles, mentioned an exception: "However, they stand out for growing and processing cassava flour, which has no equal" (Botelho, 1835: 352).

33. Arquivo Histórico de Moçambique, Maputo (AHM), Secção Especial, a.III p. 9, nº 216, Frei Bartolomeu dos Mártires, "Memoria Chorografica da Provincia ou Capitania de Mossambique", 1823.

34. AHU-Moçambique, cx. 93, doc. 97, "Carta de Isidro Sousa e Sá", 25/07/1802.

Cassava cultivation varied across the imperial territories in Mozambique. In the settlements along the coast of Mozambique Island, the cassava fields were developed on lands granted by the government or the municipal council, thereby promoting the expropriation of African lands[35]. In the 1780s, cassava plantations extended to the boundaries of nearby African chiefdoms, covering an area approximately one and a half leagues long and three-quarters of a league-wide[36]. In 1787, there were at least 23 owners of cassava plantations, with 10 in Cabaceira Grande and 13 in Mossuril[37]. By 1802, the number of producers had grown to 54, while the city council admitted that new fields had been established about which they had limited information. Of these cassava plantations, 23 were in Cabaceira Grande, 26 in Mossuril and 5 in Ampapa, an area recently occupied to the west of Mossuril[38]. Henry Salt (1816: 34), the British traveller who called on Mozambique Island in 1809, visited the cassava fields in Mossuril and described how the shrubs were planted in squares divided by rows of mango and cashew trees. Some cassava estates became so valuable that they were referred to as *roças*, instead of the local *machamba* that identified cultivated fields, indicating a specialisation that could only be compared to palm groves (*palmares*). The term *roça* was imported from Brazil, where it labelled lands producing food crops around settlements, particularly cassava, reflecting new imperial circulations. However, while in Brazil, *roças* could be cultivated through various work relationships, and even involving just kin producers, in Mozambique, the entire workforce was enslaved[39]. In the Rios de Sena, cassava was grown in the gardens (*hortas*) established alongside the *luanes* (complexes of buildings encompassing the landholders' residences, slaves' houses, warehouses and gardens) on the *prazos*. These gardens, worked by enslaved women, primarily grew vegetables and fruits, complementing the provisions obtained through tributes collected from Africans and purchased from them in and out of the *prazos*' villages (Newitt, 1995; Rodrigues, 2013). It is likely that in the Zambezi Valley and other locations throughout the colony, cassava was planted in the same square grid pattern portrayed by Salt.

There is little evidence concerning the varieties of cassava that were planted. Luís Vicente de Simoni, an Italian physician who settled on Mozambique Island between 1819 and 1821, reported that the roots contained little poison, identifying them as the

35. For details on the land's grants, see Bastião (2020).

36. Anonymous, "Descripção da Capitania de Monsabique (1788)", in Andrade (1955: 37); AHU-Moçambique, cx. 60, doc. 35, "Denuncia de Manuel Nascimento Nunes", 10/06/1790.

37. AHU-Moçambique, cx. 55, doc. 15, "Relação dos moradores que fazem farinha de mandioca", 03/09/1787.

38. AHU, cód. 1353, fls. 259v-260v, "Relação de pessoas que possuem machambas", 20/03/1802.

39. On *roças* in Brazil, see Cascudo (1967). The word *roça* derives from the verb *roçar*, *i.e.,* clear the bush.

sweet variety, with "very large, white tubers"[40]. He added that the flour was darker than in Brazil. However, most sources depicted the flour in Mozambique as very white, equivalent or superior to that of Brazil, suggesting the use of the bitter varieties that were more commonly employed to make flour. Three qualities of cassava existed in the mid-19th century, all with local designations, indicating that the Africans had already appropriated the American plant. The variety known as *mujava,* a name that persisted in being associated with the Yao, hence, the type of tuber earlier known as *Mujao yams,* was identified as sweet cassava or *aipim* as in Brazil. Another kind of cassava was the *macua,* a denomination that linked this variety with the Makua people living along the shore facing Mozambique Island. The last variety was the *impuana,* a name that seems to have been an alternative for Impitane, located in the bay of Tungue, suggesting a connection to Mozambique's northern coast (Gama, 1859: 175-76). Sweet cassava did not involve special preparation before being eaten; it was cooked by boiling, stewing or roasting, being consumed, sometimes as a snack, by the local elite as well as by the poorest Africans[41]. Bitter cassava required processing techniques to eliminate the hydrocyanic acid. Two main methods were applied: the first involved the production of flour in mills utilising technology that had been developed in Brazil; the second method entailed drying the roots in the sun, a technique that had already been employed during the 17th century in West Central Africa.

The cassava mills were mainly established in estates along the coast of Mozambique Island. For instance, in 1781, João Francisco Delgado, who owned vast cassava plantations in Cabaceira Grande and Mugolomoza, had a mill[42]. In 1789, António Corte Real and his wife, Quitéria Maria de Sousa, similarly held two cassava fields with a mill[43]. In the early 1780s, the cassava mills on the mainland produced about 30,000 *alqueires* of flour[44]. Some records enumerating owners of plantations indicated their capacity to supply flour for the Royal Warehouses, which suggests that there were 27 mills in 1787 while this number expanded to 54 by 1802. Even though estates were destroyed during the war with the sheik of Quitangonha, by 1799-1801, these mills could deliver 35,000

40. Biblioteca Nacional, Rio de Janeiro (BN), Manuscritos, cod. I-47, 23, 17, Luís Vicente de Simoni, "Tratado Médico sobre o Clima e Enfermidades de Moçambique," 1821, fl. 56.

41. BN, Simoni, "Tratado Médico", fl. 115; Salt (1816: 45); Gama (1859: 175).

42. AHU-Moçambique, cx. 36, doc. 44, "Atestação passada por Duarte Aurélio de Meneses", 23/09/1781; AHU, cód. 1344, fls. 11-12v, "Carta de Vicente Maia Vasconcelos", 25/09/1781.

43. AHU-Moçambique, cx. 57, doc. 8, "Atestação passada por José Ferreira da Graça", 27/01/1789; doc. 9, "Inventário dos bens de António Corte Real", 21/01/1789; cx. 60, doc. 35, "Denuncia de Manuel Nascimento Nunes", 10/06/1790.

44. AHU-Moçambique, cx. 34, doc. 38, "Carta de Vicente Maia Vasconcelos", 18/08/1780.

alqueires of flour[45]. The mills were rare in other areas of Mozambique, where it was more difficult to access the required equipment. In the Zambezi Valley, the first mill, established in the 1780s, was located on the right bank of the river, on the Caia estate, under Manuel Estácio da Ponte Pedreira, who had lived in Brazil before settling in Mozambique[46]. In 1791, another *prazo*-holder, Cristóvão de Azevedo e Vasconcelos, ordered parts on Mozambique Island to build mills[47]. However, this technology was not reported in the *prazos* in the early 19th century (Truão, 1889).

Henry Salt, who visited the mill of Joaquim do Rosário Monteiro, the leading slave trader of the age, described how the 100 slaves who worked there handled the roots to produce flour:

> They [cassava roots] are drug up, and brought to the place on asses, and in hackeries drawn by bullocks, of a large breed from Madagascar, and are then cleared from the dirt and rind, with rough scrapers, formed out of a large species of shell, (Helix terrestris) which is found in great profusion on the coast. After this process they are exposed to the sun, and, when sufficiently dry, are ground down as finely as possible, with a hand wheel, edged with copper, and stuck round with spikes; this being complete, the pulp is put into large bags, and pressed with a heavy weight, and when all the juice is extracted, (which is said to be of a poisonous quality,) the mass is broken to pieces with the hand, and dried on copper-stoves, heated for the purpose, which reduces it to a wholesome farina (Salt, 1816: 35-6).

The processing of the roots involved various stages: scraping them with seashells, grating them on a spiked copper wheel, pressing them with weights to extract the prussic acid and, finally, drying them in large copper pots over a low fire to obtain flour. This method was clearly transferred from Brazilian mills, where settlers had already innovated upon Tupi-Guaraní techniques[48]. The parts used in the mills, such as the wheels and the weights, were imported from Brazil, while the sizable copper pots employed to toast the

45. AHU-Moçambique, cx. 55, doc. 15, "Relação dos moradores", 03/09/1787; AHU, cód. 1353, fls. 259v-260v, "Relação de pessoas", 20/03/1802.

46. AHU-Moçambique, cx. 56, doc. 76, "Relação de Manuel Estácio da Ponte Pedreira", 05/01/1788.

47. AHU, cód. 1358, fls. 117v-118, "Carta de António de Melo e Castro", 29/05/1791.

48. On the techniques developed in Brazil, see Cascudo (1967) and Rodrigues (2017). The same method for processing cassava flour was introduced in Angola (Vansina, 1997).

flour were supplied by Portuguese merchants and the French from the Mascarenes[49]. The colonial authorities endorsed the advanced techniques for making flour in Mozambique, reporting that there were "excellent mills there, with state-of-the-art technology" (Botelho, 1835: 287). Thus, a significant industry developed on the mainland of Mozambique Island to supply "cassava flour, which is peerless in terms of its light colour and superior taste" (1835: 336). Flour was also made from sweet cassava, which was "darker and had a coarser texture"[50]. As in Brazil, the manufacture of tapioca, a starch finer and lighter than flour, was also established, as was the production of *olanga*, a fine powder obtained from flakes deposited by cassava juice, with therapeutic uses (Gama, 1858: 175-76).

Another widespread technique for processing bitter cassava involved drying it in the sun, which effectively removed the acid and preserved the roots for a long time. This method consisted of "peeling the cassava, chopping it into small slices, leaving the pieces to dry in the sun and after they were dry pounding them into a batter: this is what is called *macaca*"[51]. This technique was widespread in the Mozambique Island area, and it was probably the only method prevalent in other parts of Mozambique, where it was difficult to get the necessary equipment to set up mills. Apart from being pounded to form a batter, the dried slices were grated to make flour, a common procedure in the Zambezi Valley and the Quirimbas Archipelago (Truão, 1889: 12-27; Botelho, 1835: 187, 287). This method was like the one employed since the 17th century in Soyo and Loango, in West Central Africa, where the root was soaked in water, cut into pieces, and dried in the sun to make flour or, alternatively, the pieces of slightly dried tuber were moulded into a loaf shape and steamed. Vansina (1997) associates these techniques with a phase of cassava Africanisation. The Portuguese expeditions to Kazembe found similar processes there. The explorers of 1798 reported that the entire tubers were immersed in water before being peeled and dried in the sun. Later, the roots were ground with a stone to prepare a batter (Almeida, 2012: 640). Another technique was described in 1831-1832: pieces of the tuber were left to soak in the river for a few days and were later smoked and dried before being stored. This flour had a slightly sour taste that was greatly appreciated locally (Gamitto, 1854: 358-59). African methods developed in West Central Africa were likely transposed to Mozambique from the African knowledge developed in Angola due to the circulation of social actors.

49. AHU, cód. 1358, fls. 91v-92v, "Carta de António Manuel de Melo e", 15/11/1788; fls. 117v-118, "Carta de António de Melo e Castro", 29/05/1791.

50. BN, Simoni, "Tratado Médico", fl. 115.

51. AHU, cód. 1358, fls. 117v-118, "Carta de António de Melo e Castro", 29/05/1791. See also BN, Simoni, "Tratado Médico", fl. 115; Bordalo (1859: 74).

The production of cassava in Mozambique entailed social changes, stressing slave relationships. Agriculture largely remained an African initiative in the territories under colonial rule, carried out by free Africans. Yet, the cassava production in the *terra firme* of Mozambique Island was organised by Europeans using a plantation system on the estates and mills. The tasks for cultivating and processing cassava relied on slave labour (Gama, 1858: 176; Salt, 1816), thereby reinforcing social control over the work of enslaved Africans, especially in the production of flour, which required a larger workforce. In 1802, the slaves of the *moradores* located in *terra firme* numbered 3,015, though the ratio of men to women is unknown. It is probable that part of the 5,304 slaves owned by the *moradores* of the island also worked on their plantations located along the coast. Of these, 2,506 (47.25%) were men and 2,798 (52.75%) were women[52]. However, there is scant information regarding the gendered division of labour on the plantations. It is possible that according to the organisation of labour in the region (Mbwiliza, 1991), similar to the case of Angola (Vansina 1997), women cultivated the plant while men produced flour in the mills, which required intensive labour. Unfortunately, we know truly little about the working conditions of enslaved workers within the *roças* and mills.

The expansion of cassava cultivation was accompanied by increased local consumption, albeit characterised by geographic and social differences. In the Mozambique Island region, cassava became a staple in the diet of the entire population, although there were social distinctions regarding its consumption. According to Salt (1816: 35-6), by the early 19th century, the flour manufactured in mills, like the one he visited, was already the primary nourishment for enslaved Africans: "This [*farinha*], when mixed with water, constitutes almost entirely the food of slaves" (see also Prior, 1819: 34). This was similar to the situation in the Mascarenes and Zanzibar at that time, where slave labour also supported the plantations (Cooper, 1977). Nevertheless, since the 1790s, local sources indicate the prevalence of *macaca*, sun-dried slices of the root, as the main sustenance for the enslaved people.

Colonial authorities considered *macaca* to be "the most typical foodstuff of the kaffirs, which is also simultaneously the most nutritive since it preserves all the starch and nutrition, a lot of which is lost when the root is ground to make flour"[53]. According to colonial writers, in the mid-19th century, dried cassava was the preferred food of Africans (Gama, 1858: 175; Bordalo, 1859: 250). Dried cassava also predominated in the Zambezi

52. AHU-Moçambique, cx. 96, doc. 62, "Mapa de habitantes cristãos," 20/08/1802; "Mapa das propriedades de casas com suas famílias, escravatura nesta Ilha de Moçambique," 10/11/1802.

53. AHU, cód. 1358, fls. 117v-118, "Carta do governador-geral António de Melo e Castro", 29/05/1791. See also Bordalo (1859: 74).

Valley (Truão, 1889: 12-27). Of course, this diet based on cassava was notoriously lacking in protein. Salt (1816: 35-6) also reports that settlers ate fresh cassava and used flour in their soups, "though very rarely, owing to a certain degree of pride." Nevertheless, other sources suggest that the *moradores* integrated flour into their daily meals. In the 1840s, Governor Marinho (1847: 67) blamed settlers for not supplying enough flour for the population and only producing for "the leading figures from notable families." Indeed, the repeated praise for the quality of the flour made in Mozambique indicates that the elite had embraced it as a food. The plant's leaves, rarely consumed in the Americas (Cascudo, 1967: v. 1, 103), were widely eaten in Mozambique, as in West Central Africa, where cassava was sometimes planted specifically to harvest the leaves (Vansina, 1997; Jones, 1959). After being boiled two or three times to extract the poisonous acid, the leaves were seasoned with garlic, onion and butter, then ground – a preparation known by the African name *matapa*. This dish was considered "very tasty and healthy"[54], and consumed by the elite and Africans. It was noted that Africans even preferred cassava leaves "over all other kinds of *matapa* (greens)" (Gama, 1858: 175)[55].

Despite the initial resistance, the colony's population eventually adapted to eating cassava, particularly in coastal areas. In 1781, the governor-general remarked that, on Mozambique Island, cassava was the "immediate supplement to rice and kaffir millet"[56], making it a complementary food for both settlers and Africans, while, around 1825, it had already become "an indispensable nourishment for whites and blacks" (Botelho, 1835: 272). However, the social practices around cassava consumption suggest the building of culinary hierarchies, with *macaca* being a food for enslaved Africans, marking it as a lower-status nourishment. This differentiation underscores how food practices were influenced by social stratification within the colony.

5. COMMODIFYING CASSAVA

The integration of cassava into the colonial economy in Mozambique was influenced more by the development of a domestic market and external demand through imperial trade networks than by colonial government policies aimed at making it a compulsory crop. Much of the local consumption was driven by landholders producing cassava to feed their families and slaves, but the demand for flour from the colonial government created a domestic market. Additionally, vessels en route to India and those involved

54. BN, Simoni, "Tratado Medico".
55. For the global methods of cooking cassava, see Lancaster *et al.* (1982).
56. AHU, cód. 1344, fls. 12v-13, "Carta de Vicente Maia Vasconcelos", 25/09/1781.

in slave trading began to sustain an external market for the crop. As O'Connor (2013: 224) emphasises "staples […] were an essential part of imperial trade, and in some cases literally sustained it".

The initial push to build an internal market for cassava, despite tensions with settlers, came about due to purchases by the administration to supply the Royal Warehouses. Cassava flour became a significant component of food supplies for the army, gradually replacing rice as the sole provision previously distributed to soldiers. The colonial government's expenditures reveal that flour and rice were delivered in equal quantities for soldiers and officers, a *panja* of each[57]. In 1787, the Royal Warehouses were already regularly procuring 6,900 *alqueires* of flour[58]. Dependence on this foodstuff increased markedly during times of war, underscoring its strategic importance to the Portuguese colonial military efforts. This was evident during the expeditions against the sheik of Quitangonha. In 1795, the army camped at Mossuril was supplied with 323 ½ *alqueires* of flour compared to only 43 of rice, while the following year it received 226 *alqueires* of flour and just 23 of rice. By 1799, during another expedition against the same ruler, the use of cassava flour had escalated to 1,310 *alqueires*, with rice accounting for 88. The following year, the army was supplied exclusively with cassava flour, amounting to 2,000 *alqueires*[59]. Flour was also essential in sustaining the enslaved population owned by the Royal Treasury. These individuals, both men and women, were engaged in various tasks, including working in the docks, the royal hospital and the fortress[60]. This wide application of cassava flour demonstrates its integral role in maintaining the military and civil operations of the Portuguese colonial administration.

The introduction of cassava as a staple crop in Mozambique did not eliminate the colony's reliance on imported provisions from established sources. Despite this, cassava production met a significant financial objective set by Governor Lago, which aimed to reduce the colony's expenses for acquiring supplies for the Royal Warehouses. Cassava has demonstrated economic advantages compared to the staple grains preferred by Europeans and Asians. The price of flour ranged between 600 and 800 *réis* per *alqueire*,

57. AHU-Moçambique, cx. 38, doc. 14, Diogo Guerreiro de Aboim, "Memória", 24/01/1782; cx. 34, doc. 89, "Relação das pessoas", post. 01.1783; cx. 68, doc. 19, "Mapa", 07/08/1794; cx. 71, doc. 6, "Mapa", 29/08/1795; cx. 75, doc. 58, "Mapa", 01/08/1796; AHU, cód. 1360, fls. 177v-178, "Mapa", 12/04/1797. *Panja* was a local measure of capacity used for cereals fluctuating between one *alqueire* and half and two *alqueires*, *i.e.*, between 20.85 and 28.8 litters. In 1858, it was reported that a *panja* was equivalent to one *alqueire* and three quarters (Bordalo, 1859: 83).

58. AHU-Moçambique, cx. 55, doc. 15, "Relação dos moradores", 03/09/1887.

59. AHU, cód. 1381, fls. 30-37, "Relação da despesa", 1801.

60. See, for example, AHU, cód. 1360, fl. 178, "Relação dos cafres", 12/04/1797.

making it approximately one-third the cost of rice and one-fourth the cost of wheat. The price of flour was similar to that of the grains consumed by the Africans, but it had the advantage of not depending on external supplies (Rodrigues, 1998). Furthermore, dried cassava, which served as a primary food source for enslaved Africans, was priced at only one-third of the cost of flour, thereby offering cost benefits regarding habitual cereals (Bordalo, 1859: 84-5; Anonymous, 1862). Hence, the development of a domestic market for cassava flour was largely driven by the colonial administration's need to supply provisions for the army and the small number of enslaved individuals under its control. This demand was reinforced by colonial officials, many of whom did not have familial connections within the colony and thereby depended on the local market for sustenance. Consequently, cassava played a pivotal role in cutting colonial costs and bolstering the regional economy by offering a more cost-effective substitute to imported grains.

The market for cassava expanded progressively, particularly around Mozambique Island, which became both the leading producer and main consumer of the tuber and flour. While in the late-18th century, cassava was so widespread on Mozambique Island that it was deemed as "its real bread"[61], by the mid-19th century cassava was already a staple food for four-fifths of the island's population (Gama, 1859: 174). Therefore, cassava production on the mainland was insufficient to meet the growing demand. From at least the 1820s, the island began importing cassava from the Zambezi Valley to supplement its local production (Botelho, 1835: 276). By the mid-19th century, dried roots had become the primary provision that arrived from territories around the colony. In the first four months of 1858, some 1,489 *panjas* of dry cassava were imported, *i.e.*, more than a combined total of 1,214 *panjas* of other provisions, which included 292 *panjas* of millet, 510 of maize, 324 of beans and 88 of rice (Bordalo, 1859: 74). External demand also contributed to transforming cassava into a commodity. As before in Brazilian ports, flour supplied the vessels anchored at Mozambique Island, including those plying the *Carreira da Índia* route, thereby expanding its market beyond local consumption[62].

Although cassava had not been established in Mozambique to provide the slave trade, the swift growth in human trafficking favoured the expansion of the market for flour on Mozambique Island, establishing a nexus between internal and external demand. Provisions were a relevant aspect of slave trading operations and, as in the Atlantic World (Miller, 1988: 392-98; Dalrymple-Smith & Frankema, 2017; Law, 2018), cassava played a role

61. AHU, cód. 1353, fls. 186-187, "Bando de Francisco Meneses da Costa", 26/01/1798.

62. AHU, cód. 1344, fls. 12v-13, "Carta de Vicente Maia Vasconcelos", 25/09/1781; cód. 1347, fl. 5v, "Portaria de Pedro Saldanha de Albuquerque", 13/08/1782; AHU-Moçambique, cx. 47, doc. 46, "Carta de José Ferreira Nobre", 18/08/1784; Anonymous, "Descripção da Capitania de Monsabique", in Andrade (1955: 379).

in the slave trade in the Indian Ocean, primarily in the flows to the French colonies and Portuguese America. From the 1770s onward, exports of enslaved Africans intensified to work on plantations on the Mascarene Islands while the French began to acquire slaves there for their colonies in America. Furthermore, the trade flowing to Brazil grew from the 1790s until the mid-19th century. The expanding slave trading to other destinations within the Indian Ocean throughout the 19th century did not trigger the same level of pressure on provisions, primarily because it operated through routes and ports outside of Portuguese control[63].

Indeed, the logistics of the slave trade required substantial provisioning. Vessels involved in the slave trade had to stay in Mozambican ports for extended periods while awaiting the arrival of enslaved people transported from the mainland or subaltern ports. Additionally, they had to wait for the favourable monsoon winds to navigate the Indian Ocean. It was necessary to feed both the enslaved individuals and the crews throughout this period and the journey to the destination ports. The use of flour in the Atlantic slave trade was already a well-established practice, and an analogous solution was adopted in the Indian Ocean. The fact that the primary owners of cassava plantations and mills were also involved in slave trading was not coincidental, as it allowed them to maintain enslaved individuals at reduced expenses[64].

Some slave ships procured supplies in Mozambique while others docked there with provisions. The presence of the French ships on Mozambique Island, which began to be allowed on the pretext of providing rice, was associated with the expansion of crops, particularly cassava. In the 1790s, it was noted that there was a "great extraction [of provisions] with the slaves that the French export, as they feed the same slaves with most of the supplies they buy in Mozambique"[65]. Furthermore, from 1790 onward, French vessels could only acquire slaves and provisions and were banned from other trading activities, although smuggling continued as a common practice[66]. Illustrating the importance of provisions export relating to slave trading is a contract issued to Joaquim do Rosário Monteiro to transport slaves to Mauritius. The agreement obliged him to provide rice, cassava flour and beans, as well as olive oil or butter, for the crew. Regarding the enslaved

63. On the slave trade, see Alpers (1975), Capela (2002), and Allen (2014).

64. For the cassava plantations, see, for example, AHU, cód. 1353, fls. 259v-260v, "Relação de Pessoas", 20/03/1802. For the slave traders, see Capela (2002).

6565. AHU-Moçambique, cx. 60, doc. 35, "Denuncia de Manuel Nascimento Nunes", 10/06/1790.

66. AHU-Moçambique, cx. 60, doc. 21, "Conditions auxquelles sont reçus les navires français pour faire la traite des noirs a Mozambique", 04/05/1790.

the contract only mentioned "provisions" without detailing the exact types of food[67]. Nevertheless, various French ships came to Mozambique with supplies, as shown in the inspection records issued by the Portuguese authorities[68]. Indeed, provisions produced in Mozambique were insufficient to supply the slave trading vessels. For example, Joaquim do Rosário Monteiro imported flour from Île de France, probably before establishing his large mill in Mossuril[69]. It is likely that enslaved Africans were fed with dried cassava on land, while flour was preferred for voyages, owing to its durability. However, flour does not seem to have been the main foodstuff aboard French ships. For example, the commander of the vessel *Licorne,* which, in 1787-1788, engaged in the slave trade in Mozambique, shipped cassava biscuits produced on Île de France only as a snack and as a diet for the sick (Debien, 1979-1980). In the early 19th century, Epidariste Colin, a surgeon from Île de France, complained about the monotony of the two daily rice meals provided to the slaves on their journey from Mozambique. He proposed a more varied diet with the incorporation of maize, millet and biscuits, the latter undoubtedly crafted from cassava flour (Colin, 1809: 327).

As the slave trade to the Mascarene decreased, the demands of the Atlantic routes began to pressure cassava production. According to Capela (2002: 256), flour was used to feed slaves, along with beans, rice and corn. Ships from Brazil also acquired provisions in Mozambique, although some arrived with foodstuffs[70]. For example, purchases of nourishments on Mozambique Island were recorded during the 1810s, among the expenditure of the brigs *Delfim* and *Golfinho* (Carreira, 1979). Brazil, which was an independent nation from 1822, proceeded to buy enslaved people in Mozambique after the legal abolition of the slave trade in 1836. In the 1840s, a Brazilian ship hunted down by a British patrol carried rice, beans, cassava flour and tapioca as provisions. The flour was distributed to enslaved people for their morning meals and, when an uprising arose, hungry slaves would immediately make their way to the warehouses where the flour was stored (Hill, 1844: 13, 42). In other ports in Mozambique where cassava flour was not regularly produced, the slave trading vessels would arrive with flour while acquiring local crops. For example, in the 1820s, between eight and twelve Brazilian ships reached every year Quelimane, where they purchased great quantities of rice and beans, but arrived with flour from Brazil[71]. Hence, flour was part of the provisions on slave trading vessels,

67. AHU-Moçambique, cx. 56, doc. 57, "Condições de fretamento da corveta Nossa Senhora de Belém", 26/05/1788.

68. See several ships visit records in AHU-Moçambique, cx. 60, doc. 21.

69. AHU-Moçambique, cx. 60, doc. 35, "Denuncia de Manuel Nascimento Nunes", 10/06/1790.

70. BA, Simoni, "Tratado Médico", fl. 61; AHM, Mártires, "Memoria Chorografica".

71. AHU, cód. 1452, fls. 86v-88, "Carta de José Alves Barbosa", 14/05/1825; Cirne (1890).

although it does not appear to have been the primary food staple. Yet, cassava played a significant role in supporting the slave trade by providing sustenance for enslaved individuals both on land and during voyages to destination ports, as well as for the crews, integrating the region more deeply into the global economy of the slave trade.

The abolitionist measures that led to a decrease in slave trading directly affected flour production in the mid-19th century. In fact, in the 1840s, an eyewitness reported that flour was previously produced "in abundant quantities, for the ships that went there to load slaves", lamenting the decline in production that was taking place when there was a sharp decay in the slave trade[72]. Cassava was then so closely linked to the slave trade that the decrease in exports had to impact the fate of this commodity. Mozambique's cassava found new overseas markets but not comparable with those pushed by the slave trade: since the 1840s small quantities of flour, tapioca and *olanga* were exported to Lisbon and Bombay, in British India (Liesegang, 1983: 467; Gama, 1859: 100-1; Anonymous, 1862: 26). Indeed, through multiple imperial trading networks, which have yet to be explored in appropriate detail, cassava entangled the domestic and external markets.

6. CONCLUSION

Limited information is available regarding the circulation of cassava in the Indian Ocean world, including its arrival in the region, the timing of its introduction, its impact on the local and regional economy and how it was integrated into local agricultural systems and fashioned food practices. In the case of colonial Mozambique, this research has shown that the plant reached the territory prior to 1768, when the colonial administration officially recognized it. Two potential pathways for the introduction of cassava to Mozambique have been proposed. First, the tuber could have been transported from the inland to the seashore of Mozambique Island by Yao merchants who travelled there from east of Lake Nyasa. Second, it could have arrived in the area through maritime routes, possibly on French ships. Nevertheless, cassava was already integrated into African foodways along the coast of Mozambique Island, where it served as a complement or an alternative foodstuff to cultivated grains during times of subsistence crises.

Until the mid-19th century, excluding the Yao country, cassava was disseminated across the territory of modern Mozambique primarily due to the policies of colonial administration to promote food self-sufficiency, reducing reliance on external supplies,

72. Instituto Histórico Geográfico, Rio de Janeiro, "Descrição sobre os domínios portugueses na África", s.d., c. 1845.

diminishing the expenses of supporting military troops and overcoming food shortages. Cassava crops expanded, reshaping environmental settings, despite conflicts with the settlers and the resistance of Africans. The resistance of the African population residing along the coast of Mozambique Island towards this foodstuff appears to have been less noticeable compared to the opposition observed in the *prazos* of the Zambezi Valley. This could be attributed to their familiarity with cassava as a forest food, as well as the settlers' enhanced authority over enslaved individuals. In the Zambezi region, where Africans controlled farming production, they openly resisted the colonial authorities' efforts to shift their agricultural systems and foodways in favour of consuming a plant that turned out to be fatally toxic. Around the second quarter of the 19th century, some independent African polities in the vicinity of Mozambique Island, Tete and Inhambane began to embrace the plant. However, until the mid-19th century, the spread of the crops proved to be primarily centred around colonial spaces. Further in-depth research is required to understand the position of the independent rulers regarding this new crop and its food uses.

The trajectory of cassava in Mozambique reveals trans-imperial connections that span various territories within the Portuguese empire, engaging not only the Portuguese but also other European empires. Knowledge about cultivating this shrub and producing flour in mills was imported from Brazil. Meanwhile, the plant's circulation in West Central Africa had already given rise to new methods of processing and consuming the tuber, which were subsequently transferred to Mozambique, probably from Angola. Portuguese merchants from Brazil and the French from the Mascarenes supplied the materials to build the mills. The production of cassava and its by-products thus involved not only the spread of the plant itself but also the circulation of agricultural, industrial and food knowledge across imperial territories, resulting in technical changes in Mozambique.

This study also demonstrated that cassava was not introduced into Mozambique to support the slave trade. Initially, cassava production in plantations, which saw a rise in the utilisation of enslaved labour, was primarily aimed at the domestic market, particularly to supply the army, rather than to support the slave trade. However, on Mozambique Island, which frequently faced significant foodstuffs shortages, enslaved Africans quickly began consuming cassava. The rise in slave trading from the late 18th century, initially to the Mascarenes and later to America, bolstered cassava as a commodity, expanding and connecting domestic and overseas trading networks. Slices of the dried root were provided to enslaved Africans before embarkation, while flour, albeit a minor role, was used to feed them and the crews during the voyage. As the crop became more widely cultivated, regional mercantile routes circulating provisions integrated cassava into the range of foodstuffs regularly supplied to Mozambique Island, such as in the case of the Zambezi Valley, where cassava had become the primary provision being exported by the

mid-19th century. Thus, the commodification of cassava initially revolved around supplying the colonial army, later tightly driven by the slave trade, and, ultimately, began to counter the demand in Europe and British India, demonstrating the significant role this foodstuff played in building the Portuguese empire in East Africa.

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