



Royal Netherlands Academy of Arts and Sciences (KNAW) KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN

Local Peasants and Global Commodities: Sugar Frontiers in India, Indonesia and the Philippines

Bosma, Ulbe

published in

Austrian Journal of Historical Studies
2020

DOI (link to publisher)

[10.25365/oezg-2019-30-3-3](https://doi.org/10.25365/oezg-2019-30-3-3)

[Link to publication in KNAW Research Portal](#)

citation for published version (APA)

Bosma, U. (2020). Local Peasants and Global Commodities: Sugar Frontiers in India, Indonesia and the Philippines. *Austrian Journal of Historical Studies*, 30(3), 42. <https://doi.org/10.25365/oezg-2019-30-3-3>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the KNAW public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the KNAW public portal.

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

pure@knaw.nl

Local Peasants and Global Commodities: Sugar Frontiers in India, Indonesia and the Philippines

Abstract: While the sugar-producing regions in India, in Java and on Negros Island have exhibited a variety of commodity frontiers, they differ fundamentally from sugar frontiers in the Atlantic region. The latter were typically *external* plantation frontiers created through land grabbing and populated with imported slaves or indentured workers after the respective native populations had perished through diseases and violence. By contrast, sugar production in Asia was usually embedded into existing agricultural systems; here the frontiers were *internal* ones dominated by powerful landowners or creditors. Peasants were sometimes able to escape their thralldom and open their own external frontiers on uninhabited land. Over time, however, these enterprising peasants invariably came under the sway of more powerful agents as well. All across Asia, the major farmers and landlords who were allied with or frequently owned the sugar factories subjugated most of the local labour force to their economic interests. As a result, the difference between internal and external sugar frontiers in Asia became blurred over the course of the twentieth century. Yet these Asian frontiers still exhibit very different patterns of negotiation and contestation to this day, as will be shown in this article.

Key Words: commodity frontiers, sugar, peasants, plantations, India, Java, the Philippines

Europe was a latecomer in the history of sugar. China, Bengal and Egypt were thriving sugar producers well before Europeans developed their plantations in the New World. Asian sugarcane was grown and milled by peasants, refined by urban manufacturers and traded throughout Asia, exceeding the Atlantic sugar trade until the

Accepted for publication after external peer review (double blind)

Ulbe Bosma, International Institute of Social History & VU University Amsterdam, Cruquiusweg 31, 1019 AT Amsterdam; ubo@iisg.nl

nineteenth century. Originating in northeast India, sugar manufacturing spread to China in the east and to the Persian Empire in the west at around the time when the Vandals sacked Rome. From the Tigris-Euphrates delta, the cultivation of sugarcane extended further to Egypt, which became a major sugar producer with an annual output of several thousand metric tons by the year 1200. European merchants purchased sugar in Alexandria, and Crusaders became acquainted with the production of the precious foodstuff through their conquest of the Levant. Some of the Crusaders established sugar estates in Cyprus, and with the decline of Egyptian sugar exports, Sicily and the Kingdom of Valencia emerged as prominent sugar producers even though their output could not match that of Egypt during its heyday.¹ Italian capitalists and Portuguese sugar makers – the latter having acquired their skills in Spanish service – transferred the production of sugar to Madeira and the Canary Islands, from where it crossed the Atlantic soon after the Columbian voyages.

This sequence of transfers across a series of European sugar colonies is usually presented as the archetypal spatial fix by which sugar jumped from one place to another whenever it had exhausted its environment. After all, the production of sugar requires scores of labourers as well as large quantities of fuel wood and fertile soil, with the latter often being depleted after two or three harvests. Jason Moore gave this moving sugar frontier the name “commodity frontier”,² which can be defined as both a *site* and a *process* of the incorporation of resources – land, raw materials, knowledge and labour – into the expanding capitalist world economy. In this context, capitalism is to be understood as a historical process of commodification of labour and nature by way of private property, a process driven by the intrinsic need to tap new opportunities for accumulation, and thus new frontiers.³ Sugar production was not inevitably unsustainable, however: The Egyptians had already learned to burn palm leaves and straw instead of wood, and manuring occurred throughout the Mediterranean.⁴ The knowledge to overcome environmental constraints thus did exist, but there was always a price to be paid in terms of increasing labour intensity. Moore mentions this in his article on Madeira, where fuel wood had to be transported to the mills from increasingly distant locations, with less return on labour as a consequence.⁵ Under the rigour of an emerging global sugar market with permanently declining prices, larger islands with abundant forests and virgin land had a competitive edge over plantation islands where fuel and fertile soil could only be obtained at considerable costs.

The sugar commodity frontier in the Atlantic World is a typical case of an *external* plantation frontier, with land being appropriated at will and enslaved or indentured workers being imported after the native populations had perished as a result of diseases and violence. Such plantation frontiers did not exist in Asia, where peasants rather than capitalists were the driving force. The vast majority of sugar frontiers

in Asia were *internal* frontiers embedded in existing agricultural systems. Taiwan was an exceptional external frontier that rapidly developed into a sugar belt during the seventeenth century when the south-eastern Chinese mainland was in political turmoil and suffered from overpopulation. Immigrants from this part of China, especially from Fujian, developed a sugar frontier on the large and thinly populated island, crowding out its aboriginal population and purportedly achieving a sugar output of 50,000 tons in the 1720s, making Taiwan the largest sugar exporter in the world at the time.⁶ And yet it remained a peasant frontier, not a plantation frontier. The sparsely populated island of Negros in the Philippines, which developed into a sugar production hub in the second half of the nineteenth century supported by an influx of almost 400,000 immigrants, is perhaps the closest analogy to the Atlantic plantation islands, but it still featured distinct characteristics of a peasant economy encapsulated in a hacienda system.⁷

On the whole, Asia offers a counterpoint to the dominant story of sugar as an external plantation frontier, since sugar production in Asia was part of the peasant economy. By contrast, the plantation-model sugar frontiers were marked by ownership and absolute control over all agricultural and industrial aspects of production. The counterpoint of peasant production is highly relevant from a global perspective, since Asia has always produced far more sugar than the Caribbean islands and its potential for sugar production seemed inexhaustible – though difficult or even impossible to combine with the plantation model, where the industrial and agricultural facets are united due to the mills being controlled by the landowners, thus ensuring a stable cane supply and efficient processing. The crucial importance of this point obviously escaped British abolitionists when they believed that India could replace the West Indies as a supplier of sugar through transferral of the West Indies plantation model to India – including state-of-the-art equipment, procedures and, last but not least, higher-yield cane varieties.⁸ Like in China and the Philippines, raw sugar production in India was firmly embedded in established agricultural systems, and sugar refinement occurred in urban production facilities. Only in Java did integrated sugar estates managed by ethnic Chinese or Chinese immigrant millers exist, but this system would not survive the early nineteenth century.

Commodity frontiers are always subject to negotiations and engender contention between multiple human and non-human agents, but the terms of negotiation possessed distinctive characteristics in the case of the Asian sugar frontiers due to their incorporation in extant agricultural systems and commercial cycles. This posed considerable challenges regarding the alignment of the agricultural and manufacturing aspects of sugar production, as I will argue in this article based on the case studies of Java, India and the Philippines. While most factories in different parts of India failed to obtain cane from the farmers and local production of raw sugar has

thus continued to this day, the introduction of the West Indies plantation model in Java was an utter failure as well, with appreciable volumes of sugar only being produced after the colonial government had exerted its power to couple the growing of sugarcane with existing wet rice cultivation under coerced conditions to ensure a stable cane supply. In the Philippines, the landlords or *hacenderos* proved to be the most powerful stakeholders in the sugar sector, enserfing cane-growing smallholders and battling the factories. Hence the frontiers within sugar-producing societies became sites of interaction, conflict and negotiation not just between capital and labour or between capitalist accumulation and ecological limitations, but also between field and factory. The governments of newly independent India and Indonesia acknowledged that a balance had to be found between the interest of the factories in a steady supply of sugarcane for their production and the right of the farmers to sell at a fair price. These governments assigned the role of coordinating and negotiating between peasants and factory owners to cooperatives. Such cooperatives did not emerge in Negros, however.

Commodification of Sugar

Prior to the second millennium AD, sugar hardly existed as the crystalline commodity it is known as today; it was – to use Wallerstein’s expression – a preciousness, a precious item. Its origins lie in North India, where a coarse sugar existed that was made of juice squeezed from sugarcane and boiled long enough to turn it into a brown mass known as *gur*. This product was the customary breakfast for peasants in winter, elephants in palace stables had it mixed in with their hay, pilgrims could count on hospitable villagers to provide some *gur* enabling them to carry on, and it was an important part of soldiers’ rations as well.⁹ Medicinal qualities were attributed to it, since it provided easily digestible calories to enfeebled human bodies. Buddhist priests considered sugar and sugar water to be medicaments rather than foodstuffs and therefore permitted their consumption during fasting.

With time and the discovery of techniques that could produce highly refined white sugar, it became a prerogative of princes, adorning their banquets in the shape of sculptures. In the next stage, sugar consumption spread to the elites as a delight served during their festivities. Subsequently, sugar gradually reached more and more social layers as a condiment, as confectionery or as a food preservative. This was a more or less universal development throughout Eurasia and entwined with continually decreasing prices and rising production volumes.¹⁰ The refining process initially developed to manufacture shining crystalline sugar for local courts became key to the trading of sugar over long distances, since the removal of perishable parti-

cles allowed it to be stored for months without rotting. The stage of producing sugar for export was reached in China, Bengal and Egypt during the thirteenth century. In the Bengal Sultanate, the pestle and mortar cane grinder was introduced to replace previous, more labour-intensive methods of extracting juice from the cane, and the cumbersome diffusion system used in China, in which the cane was first peeled and boiled before its juice was pressed out, was supplanted by the twin-roller mill. Both the pestle and mortar and the roller mill were driven by oxen.¹¹ In the early sixteenth century, Guangdong in south-eastern China became a major sugar exporter primarily for the Chinese market, in which cotton and sugar became the most important commodities for coastal trade. Chinese sugar, however, also found its way abroad – from Japan to the western coasts of the Indian Ocean and Central Asia. Meanwhile, sugar was becoming the most important export item in Bengal as well, attracting buyers throughout the parts of the world bordering the Indian Ocean, the Red Sea and the Persian Gulf.

Since Chinese and Indian sugar were both peasant-produced, they reached their distant consumers only after various intermediary stages. The first stage of sugar production always took place in or very near the field since sugarcane, a member of the grass family, is highly prone to rotting after harvesting. If the juice is not extracted from the cane and boiled within forty-eight hours, a considerable part of the contained sucrose is lost to fermentation. Once boiled, raw sugar could be stored for several months. In North India, the harvesting of the cane and the boiling of the juice into a crude mass were firmly linked to the agricultural cycle, as they were performed starting in November right after the paddy harvest. Most of the sugar produced in India was for local consumption and likely never left the village it was made in. But a part of it was sold by the cultivators to manufacturers in cities, who made advance payments after one of their agents had inspected the cane standing in the field. The transaction occurred via the landowner, and while manufacturers were able to squeeze out a 17 to 20 percent interest for their half-year advance, for the peasant families it still represented a welcome additional income that came at little economic cost, as the raw sugar was produced following the harvest of their subsistence crops.¹² Fine *khandsari* (sugar manufactured using traditional Indian refining methods), or *quand* (or *candie*) the highest quality, could apparently be stored for years.¹³ Chinese sugar manufacturers were capable of producing a product of the same quality.

When Marco Polo journeyed through Asia in the late thirteenth century, he found an abundance of sugarcane in Bengal and believed that he had discovered the largest sugar economy of the world in south-eastern China. Production in Bengal at the time was still at the beginning of its boom. Firoz Shah Tugluq, the independ-

ent Sultan of Delhi, contributed greatly to this expansion with his canal construction projects in the Indus and Ganges plains during his long reign from 1351 to 1388.¹⁴ About 150 years later, Duarte Barbosa, the Portuguese discoverer who travelled large parts of Asia, noticed that white sugar had become a principal item of trade for Bengal. This prevalence continued until political turmoil in the eighteenth century seriously damaged Bengal's position as a major sugar exporter.¹⁵ Initially, the Bengalese exports were transported overland to Persia or Central Asia via Herat, Kabul and Kandahar in large caravans sometimes comprising up to two thousand camels.¹⁶ From Bukhara (in present-day Uzbekistan) and northern Persia, caravans carried the refined sugar even further into Central Asia.¹⁷

From the fourteenth century onwards, sugar in South Asia was increasingly transported by sea, which was cheaper and much faster than land transport. Maritime trade routes connected Indian as well as Chinese sugar production with markets in Central Asia and the Western Indian Ocean. Cities along the Persian Gulf served as transshipment ports for delivery further to the north. This trade was joined by new sugar producers such as the Punjab, from where sugar was shipped to Surat and then on to Persia, a previously important sugar producer in its own right whose sugar cultivation was waning due to neglected canal systems.¹⁸ In addition, Barbosa and his contemporary Tomé Pires noticed that cane sugar and palm sugar from Malabar and Baticala (sixty kilometres south of present-day Mumbai) were also being shipped to Gujarat and Cambay, the emporium of West India according to Pires.¹⁹ From there it was traded along the Indus as well as to the Hadramauti coast and further into the Arabian Peninsula.²⁰ Gujarati merchants continued to deliver sugar to Ormuz and Aden well into the eighteenth century.²¹ Following the same pattern as China and Bengal, global trade encouraged technical developments in South India and the Punjab as well. One crucial innovation were the mills with vertical rollers and worm gears that were seen in Punjab and on the west coast of India by the late seventeenth century, but in all likelihood had been invented some time earlier.²²

The Asian maritime sugar trade was already well-developed before European trading companies became involved, though the traded volumes did increase considerably starting in the late seventeenth century. The VOC (Dutch East India Company) began to supply the Persian market with *khandsari* from Bengal in substantial quantities.²³ Additional white sugar came from Java, China and the Philippines.²⁴ Bengal's river system was navigated by large numbers of boats carrying raw sugar (*gur*) as well as refined sugars and their by-products – e.g. molasses for cattle or alcoholic beverages. Patna in Bihar and Banares in Uttar Pradesh served as nodes in this trade, collecting raw sugar from the northernmost regions of India to be delivered to Bengal further to the south.²⁵

Until the early nineteenth century, Chinese and Indian peasant sugar reached markets throughout Asia, and although European traders inserted themselves into the Asian sugar trade, they did not manage to become involved in the production itself as they were unable to enter the local economies. The notable exception to this rule was Java, where sugar was produced by Chinese entrepreneurs around Batavia and increasingly further eastward along Java's northern coast starting in the seventeenth century. This sugar was delivered to the VOC and found its way into West Asian markets.²⁶ Batavia's Chinese sugar complex stumbled over serious ecological problems at the turn of the nineteenth century, however: Soil exhaustion, the disappearance of the forests needed to provide wood for fuel, and the shortage of buffalo to grind and transport the sugarcane plagued the millers around Batavia.²⁷

India: Failed Early Industrialization

By and large, the internal sugar frontiers of Asia were thriving on the basis of peasant production finding markets from Oman to Nagasaki at the time when British planters trained in the West Indies first developed plans to transfer the business model of the plantation to Asia. In the 1780s, this intention was driven by a general sense of unease regarding the future of the West Indies sugar plantations. Although these Caribbean islands were by far the most important British colonial possessions and the plantation interests were well-represented in the British Parliament, the War of Independence with the North American colonies (1776–1783) – in which the Dutch and the French sided with the rebels – along with hurricanes and famines had significantly diminished their profitability, and the emerging abolitionist movement in Britain endangered their labour supplies.

Just a few years before the British anti-slavery movement emerged, the East India Company had seized the sovereignty of Bengal and firmly established itself in Madras, both of which were major regions of sugar production that could potentially replace the West Indies. British sugar imports from India – the locally produced *khandsari* – grew from a few tons in the 1780s to 11,000 tons in the early 1790s.²⁸ In the meantime, West Indies planters who were looking for new opportunities tried to convince the East India Company to hire them for their expertise. One of them, a man named William Fitzmaurice who boasted sixteen years of plantation experience, observed that the Indian mode of grinding sugar was so slow that “the juice acquires a degree of acidity that destroys not only a considerable portion of the saccharine particles, but contaminates the whole body that remains, and which afterwards cannot be corrected; indeed the cane-juice is in forward state of fermentation before the process of boiling is commenced.”²⁹ It was around this time that first

attempts were made to establish sugar plantations in northern Bihar by leasing land along with servile labour from the local landlords (zamindars) or, as was the case in Madras, by negotiating deliveries of cane with the local peasantry. Neither the Bihar rajas nor the villagers of Madras proved sufficiently cooperative for these experiments to succeed, however.³⁰

Making the plantation business model work in rural India was almost impossible for three separate reasons. Firstly, the government of India did not allow foreigners to own land for plantations, a position stated unequivocally by Lord Cornwallis, governor-general of India from 1786 to 1793. Secondly, while the state-of-the-art equipment shipped to India at the turn of the nineteenth century required a reliable supply of cane to be profitable, Indian peasants could not be forced to grow sugarcane. As Charlesworth states regarding the Bombay Presidency, “even if the peasant agriculturalist remained the owner of his traditional holding, traders and moneylenders, through the operation of the credit and marketing systems, were, perhaps, able to secure growing proportions of the output.”³¹ This immediately points to the third hurdle for British entrepreneurs, which was the market organization that Rajat Kanta Ray terms the “bazaar”. Ray argues that the colonial sector was unable to reshape local rural conditions into plantations simply because it did not control the economy of the middlemen. In Ray’s words, “only the bazaar could ‘deliver’ the goods from the bottom to the top by virtue of complex financial arrangements that interlocked its own numerous successive layers.”³² Even the rapid expansion of the railways connecting the colonial economy directly to Indian rural life could not change this state of affairs.³³ The dense complex of advances paid to sugarcane cultivators was simply impenetrable for the managers of sugar factories. It would take until the 1930s before the problem of linking cane-growing smallholders to factory production sites was addressed satisfactorily, as I will discuss later on. Although the British East India Company supported some experiments when it decided to increase its exports to Britain after the collapse of the French sugar colonies in 1793, it did so by joining rather than trying to compete with the bazaar, and it continued to purchase refined sugar from Indian urban workshops referred to as *khandsaris* after the sugar they produced.

Attempts to transfer the West Indies plantation system to India were halted for good reason until the emancipation of all slaves in the British Empire in 1834 opened up entirely new opportunities for industrial sugar production. The year 1813 had seen the invention of a new sugar boiling technology: The so-called vacuum pan was more fuel-efficient and reduced the likelihood of sugar being burnt because it lowered the boiling point to below 100 degrees Celsius. It was put into service in cane sugar mills at around the time of the abolition of slavery in the British Empire. Moreover, the duties on Indian sugar were lowered in 1834 while Cuban and Brazil-

ian slave-produced sugar were still kept out of the English market. This resulted in a bustling decade of industrial sugar production in India, with a total of 78 steam-driven sugar factories being constructed. Most of the plants built in Bengal refined *gur* while those in Bihar processed cane provided by servile peasants, and British-owned sugar factories in Madras and Orissa operated via contracts with local villages that owned land communally. During this period, Indian sugar exports to Britain exceeded 60,000 tons, one third of which was factory-processed. This was the maximum amount of sugarcane the Indian countryside could produce for the European market without cane prices going up. Dark clouds became visible on the horizon for the British sugar industrialists in 1846, however, when British industrial free trade interests began to push for the opening of the British market for cheap slave-produced sugar from Cuba and Brazil. At the same time, a new competitor was rapidly emerging in the shape of the Continental European beet sugar industry. Most of the industrial sugar facilities in India closed in the 1850s, although exports of the traditionally produced *khandsari* continued to find their way into British households until they were finally outcompeted by European beet sugar in the early 1880s.³⁴

Embedding Sugar in Java

While the plantation format could only function in India under exceptional circumstances and most industrialists had to content themselves with the processing of raw sugar, attempts to expand the existing plantation system in Java fared no better – and frequently even worse. This was despite the fact that in contrast to India, Europeans were allowed to own land on the island – initially around the capital Batavia, where many landowners leased their lands out to Chinese sugar millers. Private landownership by Europeans would further increase under Thomas Stamford Raffles (1811–1816), who governed Java during the British occupation. On one of these European-owned properties, a steam-driven cane crusher – a rare novelty in the early years of the nineteenth century – was installed and its operation assisted by eight British technicians.³⁵ Labour shortages soon rendered this expensive steam-powered milling equipment as well as improved Jamaica-model boiling pans worthless, however, and the vacuum pan was not yet in use in cane processing mills at the time. Meanwhile, the Chinese mills in the vicinity of Batavia were languishing after having reached their ecological limits.

The dwindling West Javanese output could easily have been compensated for by East Java, where a new sugar frontier dominated by ethnic Chinese merchants and Javanese nobility emerged more or less spontaneously in the 1820s. East Java (and the Residency of Pasuruan in particular) developed into a true “sugar frontier”.³⁶ It

was a sparsely populated region after having been devastated in the mid-eighteenth-century wars in Java. Separated from the overpopulated island of Madura only by a narrow sea lane, the fertile eastern salient of Java was a favoured immigration destination for Madurese,³⁷ and Chinese sugar millers were prepared to pay these pioneers well for their sugarcane in the early nineteenth century.³⁸ It was a true free commodity frontier, vividly described by Elson as follows: “Peasants, therefore, usually found themselves the masters of their own fate and the makers of their own future. Free from the cloying grip of superiors, they rolled back the frontier with a relentless display of vigour and gusto.”³⁹

It would not be long, however, before this peasant sugar frontier was absorbed by colonial capitalism. Johannes van den Bosch, the most important advisor of the Dutch king in colonial matters during the late 1820s, was aware that East Java was on its way to replacing the region around Batavia as the island’s centre of sugar production, but he feared that this development would not be sustainable. He expected the slave-operated plantations in the New World to survive the abolition of the slave trade by improving the living conditions of their unfree workers. In fact, by this time the planters on Barbados had already made their estates independent of slave imports by purchasing more female slaves to create a gender balance and by paying more attention to their slaves’ health. Van den Bosch also reckoned that the Americas had a practically insurmountable advantage over Java due to their considerably shorter distance from Europe and thus significantly lower shipping costs. Ensuring the long-term profitability of East Java’s sugar sector by creating a stable environment for the sugar factories was thus perhaps the most important reason for Van den Bosch’s introduction of his Cultivation System (1830–1870).⁴⁰ In the case of sugar production, the colonial government took care of the supply of cane to the manufacturers, who in turn were obliged to invest in state-of-the-art equipment – which included the vacuum pan in the 1840s – and sell their sugar to the semi-governmental Netherlands Trading Society (NHM) established by the Dutch king in 1824.⁴¹ The system was reinforced through the involvement of immigrants from Europe and North America, who opened merchant houses in Java’s most important port cities, as well as by the presence of local Chinese capital. Furthermore, the Cultivation System relied on the collaboration of the local aristocracy, most notably of the village heads, who were assigned the tasks of supplying parcels of land and implementing the system of labour conscription to feed the factories with sugarcane. After forced cane cultivation was phased out in the 1860s, sugar factories became even more reliant on the cooperation of the village elites for their supply of raw material.

Above all else, the Cultivation System was a radical intervention based on collaboration between the indigenous nobility, the village elites and the colonial bureau-

cracy that encroached upon the property rights of the peasantry, strengthened the power of the sugar factories and connected the Javanese rural economy to the global markets. The Netherlands Trading Society supplied the funds to cover the advances paid to Javanese peasants to plant their land with cane. In fact, the system of advances instituted by the Cultivation System worked in favour of the rich land-owning farmers by incorporating rather than eliminating local systems of money-lending, often by wealthy farmers to poorer ones. While Van den Bosch had introduced the Cultivation System to attract European capital and technology, and most importantly to support sugar factories – as well as indigo factories, for that matter – it also reinforced existing dependency relationships between smallholders and wealthier, larger-scale farmers.

As long as the Javanese sugar industry did not own the land on which its sugarcane was grown, its success was reliant on the symbiosis between big farmers and factories. Over time, coercion by the colonial government and the Javanese aristocracy, which was incorporated in the colonial bureaucracy, gave way to a village-based system in which the wealthier farmers and village administrators recruited peasants for the sugar industry. The big farmers commanded the necessary land and labour for the factories through the smallholders' indebtedness. This ensured the competitiveness of Javanese sugar on the European and later the Asian market well beyond the existence of the Cultivation System itself. The downside of this success was that the system of advances and indebtedness effectively forced hundreds of thousands of Javanese farmers to relinquish their land, and often also their labour, to sugar factories at submarket prices. The profits went to the factories and the major agriculturists, who kept the peasants in the thrall of debt.⁴² Many male and female workers in the Javanese sugar industry combined working for their own food with toil in the cane fields. Since the island's sugar sector was heavily reliant on *sawah* (irrigated) agriculture, it continued to operate within its social and ecological constraints – which necessitated a uniquely labour-intensive mode of cane cultivation. By the mid-nineteenth century, approximately 320,000 Javanese workers were producing 100,000 tons of sugar per year, whereas in Cuba, the world's largest sugar exporter at the time, some 220,000 workers were able to produce 515,000 tons.⁴³

While this comparison seems to indicate extreme labour inefficiency in Java, Clifford Geertz's famous book *Agricultural Involution* allows us to understand the level of sophistication of the colonial sugar industry in Java and the way in which it intertwined itself with an increasingly intricate system of *sawah* farming and village life. In the words of Geertz, Java's sugar industry was a kind of "centaur": half factory and half field.⁴⁴ To Geertz's lucid analysis of Java's late colonial sugar production as a socio-ecological complex, we could add that it was the result of an internal commodity frontier embedded in the existing agrarian system of *sawah* cultivation,

which developed an extremely labour-intensive system of cane growing facilitated by the quintupling of Java's population over the course of the nineteenth century – a development Van den Bosch could hardly have foreseen. The advance of sugar capitalism combined with rapid demographic growth resulting in land scarcity transformed much of the village economies under colonial sway into pure workplaces, thereby reducing the growing peasant population to the status of contract labourers.⁴⁵ It was a typical internal frontier where capital, labour and – last but not least – nature were in a permanent state of negotiation.

Philippines

In Luzon, the main island of the Philippines, Chinese immigrants had introduced their method of sugar production well before the Spanish conquest in the early sixteenth century. This method typically produced “peasant sugar” milled locally at the thousands of sugar mills still in operation by the late nineteenth century.⁴⁶ Chinese merchants bought this sugar and processed and dried it into muscovado, i.e. semi-refined sugar, that was sold to customers around the globe, including the British and U.S. refiners.⁴⁷ The nearly insatiable demand of the British for sugar caused them to promote the development of industrial sugar production in the Philippines. This was not done in Luzon, however, where production was solidly enmeshed in the local economy, but instead by opening up an external frontier on the island of Negros.

Interestingly, this plantation belt began its trajectory at exactly the same time that industrial sugar manufacturing in India collapsed – and it happened for precisely the same reason, namely because Britain's industrial economy was constantly in search of the cheapest food as well as new markets for its manufactured goods. In 1855, the Spanish authorities opened the port city of Iloilo – on the opposite shore of Negros twenty miles across the sea – to foreign trade. In the same year, the British established a vice-consulate in Iloilo directed by Nicholas Loney, who – far from coincidentally – was an agent of the Liverpool textile factories. Loney followed an aggressive policy aimed at developing sugar production in Negros and retailing cotton in the Visayas. Providing capital and contacts for equipment purchases in Britain, he encouraged capitalists from Iloilo to invest in sugar production and become landlords, *hacenderos*, on the island.⁴⁸ Labour was available in abundance in Iloilo, which like Java was experiencing rapid population growth. The *hacenderos* provided crop loans to the immigrant settlers at an interest rate of 25 per cent, which made many lose their land only a year after entering into their contract loans.⁴⁹ In the process of this massive land grab, which did not hesitate to use force, smallholders were first reduced to tenants and subsequently to sharecroppers.⁵⁰ Whereas the cultiva-

tion of cane was preferably carried out by sharecroppers, the planters relied on gangs of seasonal labourers for harvesting and haulage.⁵¹ This bifurcation into sedentary cane growers and itinerant cane cutters was also visible in East Java, where a proportion of the immigrant labourers settled around the factories and were sometimes provided with land to tie them to the respective plant.

Despite the influx of hundreds of thousands of permanent immigrants as well as seasonal labourers, labour shortages remained a common problem, however. The American Dean Worcester, who visited the Philippines around 1890, noted: “Many a time have I seen rice and sugar-cane spoiling in the field, for want of men to harvest them.”⁵² The high death toll of the savage Philippine Revolution of 1898–1901, a lack of animal power caused by rinderpest, and ramshackle infrastructure caused an immense shortage of labour during the first twenty years of American rule over the Philippines.⁵³ Workers frequently absconded since plantations were vying for their labour, as one observer wrote about Negros in 1910: “Breaches of faith by contractors after receiving advance money are frequent, and numerous instances are cited where out of twenty or thirty men reporting for work and receiving a month’s wages in advance, half have escaped within the week.”⁵⁴ Planters used pass systems, corporal punishment and nighttime confinement of labourers to maintain discipline and prevent workers from running away to other plantations.⁵⁵ These practices were condoned by the Spanish authorities in Manila, though planters and sympathetic officials were not able to convince them that *hacenderos* should formally be allowed to retain passports and maintain their own rural police. The American administrators of the Philippines likewise felt that the central government should not intervene directly on behalf of a private party in matters that the state had no part in whatsoever, and they went a step further than the Spanish authorities by condemning the employed means of labour coercion as illegal.⁵⁶ Yet there was little Manila could do – or wanted to do – against the planters’ abuse of power, even though it regularly resulted in violent clashes with oppressed workers.

It was not just that the central administration in Manila was too weak to rein in the sugar planters, however – the *hacenderos* would eventually even emerge as a dominant national political factor with the Negros planters at its core. It was precisely during American rule that the Negros sugar industry – as well as the Luzon sugar industry, for that matter – was concentrated in a small number of highly capitalized sugar processing factories (termed Centrals); production increased from just over 100,000 tons in 1913 to around 640,000 tons in 1938, and the plantation owners became large-scale farmers who had to negotiate cane prices with the Centrals. An intervention by president Manuel Quezon was required in 1938 to end a tense dispute between the *hacenderos* and the factory owners.⁵⁷

Field and Factory

The frontiers were obviously sites of interaction, conflict and negotiation within sugar-producing societies – not just between capital and labour or between capitalist accumulation and ecological limitations, but also between *field* and *factory*. The secret of Java's success allowing it to become the world's second largest cane sugar exporter after Cuba was based on an alliance between the factories and the big farmers – an alliance that materialized neither in India nor in Negros, where the factories did not control the agricultural side of production. A lasting legacy of the Cultivation System in Java that ensured a steady supply of cane to sugar factories was the *areaal* encircling each factory to compensate for the fact that it did not own the land. Within a circle of a few miles, the factory was safe from competition by other factories or colonial cash crop producers, while at the same time it was able to lease land from local farmers for sugarcane cultivation. The circles or zones around factories, controlled by the alliances between the respective factory and village elites, were an Asian approximation of the control over the field that had been exerted in the traditional Caribbean plantation model. This model was envied by the emerging industrial sugar sector in India during the early twentieth century. In fact, the unreliability of the cane supply in India compared to the steadiness found in Java explains why steam-driven sugar production in the former British colony became a *gur* processing industry, which was eventually largely destroyed by British tariff policies. By the end of the 1850s, India's sugar production was once again occurring the same manner it had been two thousand years earlier: on minute plots and with cane being ground in pestle-and-mortar mills. Even after the 1930s, when the industrialization of sugar accelerated dramatically, this traditional way of making and consuming sugar continued to exist. The reasons why India was able to resist the global trend towards industrial sugar were that cultivators were used to working on small plots and their property rights were solid enough in most areas of the country to prevent both European and Indian capitalists from bringing together large plots of land to feed steam-powered sugar manufacturing equipment.

However, in the 1930s India discovered a way to connect field and factory in a productive fashion inspired by the Javanese example but adapted to a time in which Indian nationalism was on its way to assuming governmental co-responsibility. Confronted with cheap Javanese sugar flooding the Indian market on the one hand and rapidly growing yields thanks to the introduction of higher-yield cane varieties on the other, the Indian government feared a sharp drop in cane prices that would wreak havoc on rural incomes. It therefore decided in 1932 to impose a prohibitive tariff on sugar imports, with the spectacular result of over one hundred state-of-the-art sugar factories emerging within just a few years. Most of these factories equipped

with modern machinery were financed by Indian business circles. The format of the field-factory relationship of this emerging sugar industry was derived from the Java-*nese* model during a trip to the island by the Indian Sugar Committee in 1920, where it became acquainted with the *areaal*, the designated circle assuring a factory's stable cane supply. Some members of the committee became adherents of this system to avoid the often wasteful trading and transport of cane over long distances. But owing to the increasing participation of the Indian National Congress in the country's government, the idea of tying peasants to specific factories became politically unfeasible. Nevertheless, zoning and coordination between harvest and grinding were an indispensable prerequisite for any viable industrialization of the sugar sector, since otherwise either cut cane would rot away or mills would suffer from expensive stoppages. It was also necessary to establish direct contact between the factory and the cane cultivators. In fact, the early twentieth-century Indian-owned factories encountered the same issue related to the bazaar as their British-owned predecessors. Intermediaries came to the fields to provide advances to the peasants based on the sugarcane growing in the field. These agents were loathed by some factories for being unnecessary costly and financially highly disadvantageous to the cane growers.⁵⁸ In the course of the 1930s, a solution was found to this problem by combining zoning with "farmer's cooperatives", which were instrumental in coordinating supplies of cane at such a scale that industrial sugar production became profitable without making the peasantry defenceless.

Sugar, Cooperatives and Rural Inequalities

Although the cooperative was a response to the impending independence of India – and later of Indonesia – it did not contribute to a more egalitarian rural order, as both countries' cases show unambiguously. While it was presented as a departure from the plantation in the post-colonial development model, it was actually based on a system that had proven successful in colonial times, namely the coalition between big farmers and factories. This coalition was necessary not only to unite land, labour and capital but also for purely physical reasons: The links of the agricultural manufacturing chain had to be synchronized. Important differences nevertheless existed between sugar cooperatives, as their history in India shows.

The sugar cooperatives in North India (e.g. in Uttar Pradesh and Bihar) were established to facilitate collaboration between farmers and factories as independent partners. The factories could only survive if they were able to prevent the cultivators from growing other – often more profitable – crops. This was a difficult task as long as *gur*, the raw peasant sugar, continued to be so popular in India, for with this lever-

age the farmers were capable of securing a considerable share of the profits. The system worked to the satisfaction of all parties until the late 1970s, albeit at the expense of dilapidated irrigation systems and outdated factory equipment. In the 1980s, the relationship between factories and peasantry became increasingly tense due to the increasing waiting times at factory gates and frequent stoppages of factories during the harvest. When sugar prices fell, adding insult to injury, many smallholders returned to *gur* production or gave up cane growing altogether.⁵⁹

The story was an entirely different one in the Bombay Deccan in Maharashtra, where sugar factories emerged in the 1930s. This part of India was a true sugar commodity frontier that was developed thanks to extensive irrigation works undertaken in the 1870s. Encouraged by the government of Bombay, the cane farmers formed cooperatives capable of attracting investments from the city's capitalists.⁶⁰ Even though mechanization began to enter the land of the cane growers, the *gur* prices had been high enough in the 1920s to keep the cooperatives from applying for more funding to build factories. The tariff wall against sugar imports imposed in 1932 radically altered the situation, however, and the cooperatives began building their own factories with loans from Bombay investors. Over time, the wealthiest farmers became the dominating force within the cooperative factory boards, marginalizing the majority of the peasants, whose plots became ever more minute over time. The smallholders became increasingly indebted and dependent upon the big farmers, who did not expel them from their land entirely but wanted them to stay to provide cheap dependent labour for sugar cultivation. Meanwhile, hundreds of thousands of impoverished and indebted seasonal migrants were brought in every harvesting season to do the cane cutting. In effect, the Bombay Deccan – one of India's richest states today – became a plantation belt dominated by the factories, as had been the case in colonial Java.

As a rule, once a sugar factory controlled both labour and land, it assumed many of the features of a plantation. This also applied to postcolonial Java under the Suharto regime. In the early years of independence under president Sukarno, the government's policy was to promote smallholder sugar production. However, the attempts by successive governments to eliminate the role of the village elites and foster true smallholder cane cultivation, in which each individual farmer had to contract with the factory, ended in complete failure. In the Suharto era (1965 to 1997), the smallholder model was reshaped into cooperative structures to restore the synchrony between field and factory. The gist of this "intensified smallholder cane" (*Tebu Rakyat Intensifikasi*) programme, however, was that in order to maintain a viable sugar industry, the cultivators lost their freedom to grow and sell the crops of their choice. Hence under the Suharto regime, the central role of the village head in designating land for cane cultivation, as had been the case under the Culti-

vation System, was re-established and the village elites resumed their role of controlling land and labour on behalf of the sugar factories. Undoing the earlier attempts made during the Sukarno years to escape from the colonial setting by encouraging smallholders to replace the colonial plantations, the institutional framework of sugar production under Suharto had almost turned full circle and returned to the Cultivation System.

The intensified smallholder cane-growing system of the Suharto era created a near-perfect counterpart to the large landholders in Maharashtra, who owned up to 200 hectares.⁶¹ The leading members of the Javanese cooperatives enjoyed easy access to capital and political influence at the expense of increasingly marginalized peasants. The latter effectively became wage labourers on their own land – and now bore the risks associated with lost harvests as well, which in contrast to the colonial days no longer lay with the factories.⁶² In addition, like in colonial times and the same as in the Bombay Deccan and Negros, scores of migrant cane cutters worked in the fields.

Cooperative arrangements did not prevent powerful landowners in Java and Maharashtra from controlling the local sugar sectors – in fact, their position began to resemble that of the *hacenderos* in the Philippines. However, both in Java and Maharashtra the cooperative structures continued to play a key role in coordinating field and factory. In Negros, the *hacenderos* did not own the factories nor share any responsibility for their management, but they were politically powerful enough to exact relatively high prices for their cane. In contrast to India and Indonesia, the Philippines were not forced to adapt their sugar industry to world market conditions. Protected access of Philippine sugar to the U.S. market at least until 1974 had bloated an industry that was producing at a cost price 2.5 times above market level.⁶³ In this situation, the decision by Coca Cola and PepsiCo in the early 1980s to transition from Philippine sugar to maize syrup (HFCS) had a devastating impact on the country's sugar exports. It dealt a serious blow to the livelihood of three million workers whose income depended at least partly on sugar, wreaking havoc particularly in Negros, where the sugar factories ceased to grind cane in 1985.⁶⁴ The resulting level of malnutrition on the island gave rise to international news headlines like "Asia's Ethiopia". Social discontent fuelled armed resistance and military suppression, which often indiscriminately struck down peaceful protests as well. The breaking up of one such protest in Escalanda on 20 September 1985 ended in a massacre.⁶⁵ While the immediate trigger event for Negros' tragedy lay in the U.S., it had been in the making from the very days when the island emerged as a monocrop sugar frontier in the 1850s.

Conclusion

The sugar producing regions in India, Java and the island of Negros exhibit a variety of commodity frontiers. They offer an important counterpoint to the dominant narrative of the sugar frontier as an external frontier appropriating land at will and importing coerced labour either under enslaved or indentured conditions. The initiative in these Asian frontiers was taken by peasants moving in to reap the benefits of an abundance of land and high commodity prices; Taiwan, East Java, Negros and the Bombay Deccan are prime examples in this regard. While these frontiers were opened up by enterprising small farmers, over time they came under the sway of more powerful agents: big farmers or landlords who were allied with or even owned the sugar factories. These agents intensified the pressure on local societies and subjugated most of the local labour force to their economic interests. Even where external frontiers existed, they were not necessarily fuelled by metropolitan colonizing interests, as the case of Negros shows. The island became part of the locally embedded hacienda regime, with *hacenderos* who were Philippine landlords and not European or American plantation owners.

The governments of newly independent India and Indonesia were keenly aware of the fact that sugar factories were enmeshed in existing agrarian societies – that is, they were part of internal frontiers – and that a balance had to be found between steady cane supplies for the factories and the farmers' right to negotiate a fair price. They therefore assigned the role of coordinating and negotiating between peasants and factory owners to cooperatives. This cooperative model would be pursued in other parts of the world as well, with a notable example being Jamaica, whose government strove to establish new, more equitable relations between farmers and sugar factories in the 1970s.⁶⁶

Over the course of the twentieth century, the difference between internal and external frontiers seems to have become blurred. Yet the frontiers in Asia still exhibited very different patterns of negotiation and contestation: In North India, the frontier continued to be solidly internal, as farmers could fall back on the option of producing *gur* when the factories no longer offered them acceptable prices and harassed them with excruciatingly long waiting times at factory gates. This was not the case in the frontier of Maharashtra, where big farmers aligned with the factories and kept smaller peasants under their sway. In Java, the Suharto regime encouraged the emergence of similar rural inequalities in the sugar belts and used its government apparatus to make peasants comply. This was still a very different situation to that in the monocrop sugar belt of Negros, however, which continued to be operated as a typical external frontier – i.e. an old-fashioned plantation economy – thanks to the fact

that the island's *hacenderos* politically overpowered the sugar factories and were permitted by the Philippine government to ruthlessly suppress labour activism.

Notes

- 1 Antonino Morreale, L'industria dello zucchero in Sicilia e Canarie (secoli XV–XII) *Analisi Comparativa*, 2004, 1398–1414, 1408, https://www.lettere.uniroma1.it/sites/default/files/205/Zucchero%20in%20Sicilia%20e%20Canarie_1.pdf (14 March 2020).
- 2 Jason W. Moore, Sugar and the Expansion of the Early Modern World-Economy: Commodity Frontiers, Ecological Transformation, and Industrialization, in: *Review (Fernand Braudel Center)* 23/3 (2000), 409–433.
- 3 See Jürgen Kocka, *Capitalism: A Short History*, Princeton 2016.
- 4 See Mohamed Ouerfelli, L'impact de la production du sucre sur les campagnes méditerranéennes à la fin du Moyen Âge, in: *Revue des mondes musulmans et de la Méditerranée* 126 (2009), online 2012, <http://journals.openedition.org/remmm/6363> (6 March 2020).
- 5 Jason W. Moore, Madeira, Sugar, and the Conquest of Nature in the “First” Sixteenth Century: Part I: From “Island of Timber” to Sugar Revolution, 1420–1506, in: *Review (Fernand Braudel Center)* 32/4 (2009), 345390 and Part II: From Regional Crisis to Commodity Frontier, 1506–1530, in: *Review (Fernand Braudel Center)* 33/1 (2010), 124.
- 6 Sucheta Muzamdar, *Sugar and Society in China: Peasants, Technology, and the World Market*, Cambridge 1998, 300.
- 7 Filomeno V. Aguilar, *Clash of Spirits: The History of Power and Sugar Planter Hegemony on a Visayan Island*, Honolulu 1998, 126–127.
- 8 Ulbe Bosma, *The Sugar Plantation in India and Indonesia: Industrial Production 1770–2010*, New York 2013, 17.
- 9 Jean Baptiste Tavernier, *Travels in India*. Translated from the original French edition of 1676, vol. 1, London 1989, 275, 386, 391.
- 10 Christian Daniels, *Agro-Industries: Sugarcane Technology*. Vol. 6, part III, *Science and Civilisation in India* (ed. by Joseph Needham), Cambridge 1996, 68.
- 11 Irfan Habib, *Economic History of Medieval India, 1200–1500: History of Science, Philosophy, and Culture in Indian Civilization*, Volume VIII, *Economic History of India*, part 1, Delhi 2011, 53; Daniels, *Agro-Industries*, 1996, 95–98.
- 12 Bosma, *The Sugar Plantation*, 2013, 40.
- 13 Habib, *Economic History of Medieval India*, 2011, 135.
- 14 *Ibid.*, 127.
- 15 Duarte Barbosa (Mansel Longworth Dames), *The Book of Duarte Barbosa: An Account of the Countries Bordering on the Indian Ocean and Their Inhabitants c. 1518*, vol. 2, London 1921, 146.
- 16 R. H. Davies, *Report on the Trade and Resources of the Countries on the North-Western Boundary of British India*. Lahore 1862; I. H. Siddiqi, *Tarikh-I-Manazil-I-Bukhara: A Source of Information for the Life and Conditions in the Kingdom of Bukhara in the Early Nineteenth Century*, in: *Proceedings of the Indian History Congress* 40 (1979), 952–961, 956; Scott Levi, *India, Russia and the Eighteenth-Century Transformation of the Central Asian Caravan Trade*, in: *Journal of the Economic and Social History of the Orient* 42/4 (1999), 519–548, 529.
- 17 Anya King, *Eastern Islamic Rulers and the Trade with Eastern and Inner Asia in the 10th-11th Centuries*, in: *Bulletin of the Asia Institute*, New Series 25 (2011), 175–185, 177.
- 18 R. J. Barendse, *Trade and State in the Arabian Seas: A Survey from the Fifteenth to the Eighteenth Century*, in: *Journal of World History* 11/2 (2000), 173–225, 199.
- 19 Duarte Barbosa, *A Description of the Coasts of East Africa and Malabar in the Beginning of the Sixteenth Century*, by Duarte Barbosa. Translated from an Early Spanish Manuscript in the Barcelona Library, with Notes and a Preface by the Hon. Henry E. J. Stanley, London 1866, 60, 69, 155; Tomé

- Pires, Armando Cortesão, and Francisco Rodrigues, *The Suma Oriental of Tomé Pires: An Account of the East, from the Red Sea to Japan, Written in Malacca and India in 1512–1515*, London 1944, 17, 62, 82.
- 20 Barbosa, *The Book of Duarte Barbosa*, vol. 1, 1921, 64, 107, 188.
- 21 Ruby Maloni, *Straddling the Arabian Sea: Gujarati Trade with West Asia during the 17th and 18th Centuries*, in: *Proceedings of the Indian History Congress* 64 (2003), 622–636, 629.
- 22 Habib, *Economic History of Medieval India*, 2011, 53; John Daniels/Christian Daniels, *The Origin of the Sugarcane Roller Mill*, in: *Technology and Culture* 29/3 (1988), 493–535, 523.
- 23 Om Prakash, *The Dutch East India Company and the Economy of Bengal, 1630–1720*, Princeton, 1985, 174–175; Generale Missiven, III, GS 125, 645, 743.
- 24 Norifumi Daito, *Sugar Trade in the Eighteenth-Century Persian Gulf*, Leiden, PhD Thesis 2017, 22.
- 25 Even though Buchanan wrote his travelogues in the first decade of the nineteenth century, the picture may still apply to the eighteenth century. See also Chandra P. N. Sinha, *From Decline to Destruction: Agriculture in Bihar During the Early British Rule, 1765–1813*, New Delhi 1997, 129.
- 26 J. J. Reesse, *De suikerhandel van Amsterdam. Een bijdrage tot de handelsgeschiedenis des vaderlands, hoofdzakelijk uit de archieven verzameld en samengesteld*, vol. 1, Haarlem 1908, 169, 182–183; Sucheta Mazumdar, *Sugar and society in China: Peasants, Technology, and the World Market*, Cambridge/London 1998, 89.
- 27 See Andries Teisseire, *Verhandelingen over den tegenwoordigen staat der Zuikermolens omstreeks de Stadt Batavia, Benevens de middelen tot derzelver herstel, en eenige verdere daar toe betrekkelijke aanmerkingen*, Batavia 1785.
- 28 Noel Deerr, *The History of Sugar*, vol. 1, London 1949, 59.
- 29 *The Court of the Proprietors of the Court of the East India Company, East India Sugar: Papers Respecting the Culture and Manufacture of Sugar in British India {etc. etc.}*, London 1822, 211.
- 30 Bosma, *The Sugar Plantation*, 2013, 51–57.
- 31 Neil Charlesworth, *Peasants and Imperial Rule: Agriculture and Agrarian Society in Bombay*. Cambridge 1985, 115.
- 32 Rajat Kanta Ray, *The Bazaar: Changing structural Characteristics in the Indigenous Section of the Indian Economy before and after the Great Depression*, in: *Indian Economic Social History Review* 25 (1988), 263–318, 271. See also Rajat Kanta Ray, *Asian Capital in the Age of European Domination: The Rise of the Bazaar, 1800–1914*, in: *Modern Asian Studies* 29/3 (1995), 449–554.
- 33 See Christof Dejung, *Die Fäden des globalen Marktes: Eine Sozial- und Kulturgeschichte des Welthandels am Beispiel der Handelsfirma Gebrüder Volkart 1851–1999*, Cologne 2013.
- 34 Bosma, *The Sugar Plantation*, 2013, 75–87.
- 35 Ulbe Bosma, *Het cultuurstelsel en zijn buitenlandse ondernemers. Java tussen oud en nieuw kolonialisme*, in: *Tijdschrift voor Sociale en Economische Geschiedenis* 2/2 (2005), 3–28, 24.
- 36 Although sugar production around Batavia was in decline around 1800, it was still far more important than production in the eastern salient, where according to a report by the Dutch administration there was only one sugar mill at the time. See *Verslag van W.H. van Ijsseldijk omtrent de gesteldheid van Java's Oosthoek, 15 Junij 1799*, in: J. K. J. de Jonge, *De Opkomst van het Nederlandsch gezag in Oost-Indië. Verzameling van onuitgegeven stukken uit het oud-koloniaal archief. Uitgegeven en bewerkt door ...* Vol. XII, The Hague 1933, 464–556.
- 37 Robert E. Elson, *Javanese Peasants and the Colonial Sugar Industry: Impact and Change in an East Java Residency, 1830–1940*, Singapore 1984, 4.
- 38 Egbert De Vries, *Landbouw en welvaart in het regentschap Pasoeroean*, Wageningen 1931, 70–71. See also J. Tennekes, *De Bevolkingsspreiding der Residentie Besoeki in 1930*, in: *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap* 80 (1963), 309–423.
- 39 Elson, *Javanese Peasants*, 1984, 31.
- 40 See Roger G. Knight, *From Plantation to Padi Field: The Origins of the Nineteenth Century Transformation of Java's Sugar Industry*, in: *Modern Asian Studies* 14/2 (1980), 177–204.
- 41 See Ulbe Bosma, *The Cultivation System (1830–1870) and Its Private Entrepreneurs on Colonial Java*, in: *Journal of Southeast Asian Studies* 38/2 (2007), 275–291.
- 42 Bosma, *The Sugar Plantation*, 2013, 176–177.
- 43 *Ibid.*, 114.

- 44 Clifford Geertz, *Agricultural Involution: The Processes of Ecological Change in Indonesia*, Berkeley 1963, 87.
- 45 See Roger G. Knight, *Capitalism and Commodity Production in Java*, in: Hamza Alavi (ed.), *Capitalism and Colonial Production*, London 1982, 119–158.
- 46 Ulbe Bosma, *The Making of the Periphery: How Island Southeast Asia Became a Mass Exporter of Labor*, New York 2019, 141.
- 47 John A. Larkin, *Sugar and the Origins of Modern Philippine Society*, Berkeley, 1993, 22, 26.
- 48 Alfred W. McCoy, *A Queen Dies Slowly: The Rise and Decline of Iloilo City*, in: Alfred W. McCoy/Ed. C. de Jesus (eds.), *Philippine Social History: Global Trade and Local Transformations*, Honolulu 1982, 296–358, 317.
- 49 Violetta Lopez-Gonzaga, *The Roots of Agrarian Unrest in Negros, 1850–90*, in: *Philippine Studies* 36/2 (1988), 151–165, 165; John A. Larkin, *Philippine History Reconsidered: A Socioeconomic Perspective*, in: *The American Historical Review* 87/3 (1982), 595–628, 617.
- 50 Filomeno V. Aguilar, *Clash of Spirits: The History of Power and Sugar Planter Hegemony on a Visayan Island*, Honolulu 1998, 111–113; Alfred W. McCoy, *Sugar Barons: Formation of a Native Planter Class in the Colonial Philippines*, in: *The Journal of Peasant Studies* 19/3–4 (1992), 106–141, 114.
- 51 Greg Bankoff, *Wants, Wages, and Workers*, in: *Pacific Historical Review* 74/1 (2005), 59–86, 68; Aguilar, *Clash of Spirits*, 1998, 128.
- 52 Dean Worcester, *The Philippine Islands and Their People: A Record of Personal Observation and Experience, with a Short Summary of the More Important Facts in the History of the Archipelago*, New York 1901, 75.
- 53 Bankoff, *Wants, Wages, and Workers*, (2005), 67.
- 54 Herbert S. Walker, *The Sugar Industry in the Island of Negros, Manila 1910*, 20.
- 55 McCoy, *A Queen Dies Slowly*, 1982, 323, 325.
- 56 Aguilar, *Clash of Spirits*, 1998, 137–138; Marshall S. McLennan, *Land and Tenancy in the Central Luzon Plain*, in: *Philippine Studies* 17/4 (1969), 651–682, 675.
- 57 Michael S. Billig, *The Rationality of Growing Sugar in Negros*, in: *Philippine Studies* 40/2 (1992), 153–182, 161.
- 58 R. D. Agarwala, *Sugar Industry and Labour in the United Provinces. With a foreword by R. C. Srivastava, Esq., Sugar Technologist, Imperial Council of Agricultural Research India, Allahabad 1933*, 63–65; Shahid Amin, *Peasants and Capitalists in Northern India: Kisans in the Cane Commodity Circuit in Gorakhpur in the 1930s*, in: *Journal of Peasant Studies* 8/3 (1981), 311–334, 319, 321, 322.
- 59 Bosma, *The Sugar Plantation*, 2013, 241–246.
- 60 Ignatius Chithelen, *Origins of Co-operative Sugar Industry in Maharashtra*, in: *Economic and Political Weekly* 20/14 (1985), 604–612, 605.
- 61 J. A. C. Mackie/W. J. O. Malley, *Productivity Decline in the Java Sugar Industry from an Olsonian Perspective*, in: *Comparative Studies in Society and History* 30/4 (1988), 725–749, 735.
- 62 *Ibid.*, 736–7.
- 63 Charng-Yeong Ku, *The Political Economy of the Philippine Sugar Industry*, PhD thesis, Ohio University 1989, 106; Michael Billig, *Syrup in the Wheels of Progress: The Inefficient Organisation of the Philippine Sugar Industry*, in: *Journal of Southeast Asian Studies* 24/1 (1993), 122–147.
- 64 Rosalinda Pineda-Ofreneo, *The Philippine Sugar Crisis in an International Setting*, in: *Journal of Contemporary Asia* 15/4 (1985), 455–473, 464. See also Larry Jagan and John Cunningham, *Social Volcano: Sugar Workers in the Philippines*, London 1987.
- 65 Archive IISG, *Social Movements Philippines*, inv. no. 28.
- 66 See for example James Phillips, *Democratic Socialism, the New International Economic Order, and Globalization: Jamaica's Sugar Cooperatives in the Post-Colonial Transition*, in: *The Global South* 4/2 (2010), 178–196.