Colonialism, Institutional Change, and Shifts in Global Labour Relations

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4 The Global Detour of Cane Sugar

From Plantation Island to Sugarlandia*

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Abstract
Cane sugar is known as the typical “plantation crop”, which encompasses monocrop cultivation and total control over the entire production process, from land, technology, and botany, to labour. This obviously requires full political control over the site of production by the plantation owners. The plantation model has proved to be remarkably resilient over the past 800 years and capable of adapting to varied types of labour relations. Contrary to what some might have expected, slavery was not inexorably linked to the plantation. Apart from slaves, sugar was produced using Chinese labour gangs, Indian indentured labour, debt contracts in Latin America, tenants and sharecroppers in the Philippines, coerced cultivation in Java, and smallholder cane production combined with sugar cooperatives in Java and India.

Keywords: plantations, sugar, labour, extractive institutions

As Acemoglu, Johnson and Robinson point out, a distinguishing feature of “extractive institutions” is “a high concentration of political power in the hands of a few who extracted resources from the rest of the population”.1 Both the classical plantation islands in the Caribbean and the massive sugar-producing conglomerates of twentieth-century Cuba, Java, and the

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* Much of this chapter is derived from earlier publications, most notably, Bosma, The Sugar Plantation in India; Bosma and Curry-Machado, “Two Islands, One Commodity”; Bosma and Knight, “Global Factory and Local Field”; and Bosma, “Cane Sugar and Unlimited Supplies”.

1 Acemoglu, Johnson, and Robinson, “Reversal of Fortune”, p. 1234.
Philippines are examples of extractive institutions *par excellence*. In every historiographical survey on commodity production, sugar appears as the typical “plantation crop”, which encompasses monocrop cultivation and total control over the entire production process; from land, technology, and botany, to labour. This obviously requires full political control over the site of production by the plantation owners.

The plantation model has proved to be remarkably resilient over the past 800 years, and capable of adapting to varied types of labour relations. Contrary to what some might have expected, slavery was not inexorably linked to the plantation. Apart from slaves, sugar was produced using Chinese labour gangs, Indian indentured labour, debt contracts in Latin America, tenants and sharecroppers in the Philippines, coerced cultivation in Java, and smallholder cane production combined with sugar cooperatives in Java and India. In the terms of the Global Collaboratory on the History of Labour Relations, not only all forms of commodified labour, but also tributary labour and dependent household labour were involved on a fairly large scale. Further, a number of sites of sugar production combined different labour relations. However, despite all these different sets of labour relations, the basic principles of the plantation as an extractive institution stayed the same.

Over time, sugar plantations evolved from being slaveholding appanages of absentee metropolitan commercial and political elites, to immense sugar conglomerates that had inserted themselves in local peasants. This was a consequence of changes in location, scale, and technology. First of all, the centre of gravity of plantation-style sugar shifted from the Western to the Eastern Hemisphere. Simultaneously, a transformation of sugar from a luxury item to a bulk commodity took place, and with that a thorough industrialization of the milling of sugar. Labour-intensive mills and boiling pans were replaced by fully mechanized, highly capital-intensive factories, haulage was mechanized, and for cutting, the plantations either employed combines, or, if it was cheaper, relied on massive numbers of impoverished and often indebted seasonal labour migrants to clear the fields of cane.

Through these changes in time and place, the political environment of the plantations also changed radically. The plantation owners could no longer rely on their political influence in metropolitan courts and parliaments, but had to deal with the colonial or semi-colonial states in Asia, which were much larger entities than the administrations of Caribbean islands. Moreover, whereas slaves were considered to be the plantations’ capital, labourers in the Asian colonies were colonial subjects, and hence the
responsibility of the colonial state. Whereas in the pre-eighteenth century plantation islands the planters had no other interests to take into account than their own, in nineteenth-century Asia they had to deal with local peasantries and the colonial state. This led to new organizations, such as, for example, the Sugar Syndicates in Java that at the turn of the twentieth century united all the 140 sugar factories in one powerful lobbying machine, and to refer to the vocabulary of Acemoglu, Johnson and Robinson, became “one juggernaut of extraction”. Alternatively, to use a word coined by Larkin to describe the situation in the Philippines, a “Sugarlandia”, where “monopoly of credit, control of information and higher education, an intricate web of strategic marriages, and a strong network of ritual kin helped the rich retain power and wealth and deny these to others”. This definition neatly overlaps with the one of Acemoglu and colleagues of an “extractive institution”. While the “plantation” spread over Asia, its victory was far from complete. In India, for example, peasants produced their own “cottage sugar” on the spot throughout the nineteenth century. Protected by their property rights and enmeshed in local systems of credit and advances, they not only managed to stay out of the thralls of sugar plantations, but also improved the efficiency of cane processing substantially. Even today, the large cane-processing factories only have a partial share in India’s sugar production. In other words, the situation with respect to “weak property rights”, “extractive institutions”, and “deindustrialization” is much more nuanced than Acemoglu and colleagues claim. The plantation was an extremely powerful business model and extractive institution, but not omnipotent.

In this contribution, I first briefly sketch the development of the sugar plantation as a business model and argue that its existence was not restricted to a Caribbean environment, and not inexorably linked to slavery. I also elaborate on the fact that although plantations initially only existed on islands or in colonial enclaves, from 1800 onwards, the plantation overcame its spatial bounds. In the next section, I dwell on the fact that the plantation as a business model was indeed pliable enough to coexist with Asian peasant societies, but only if it could control these societies by allying itself with native elites. In the final sections, I argue that regardless of the labour relations and factor endowments in place, fully developed plantation conglomerates belonged to the most powerful institutions in the Global South, invoking the examples of Java, Cuba, the Philippine sugar island of Negros, and post-colonial sugar cooperatives of India and Indonesia.

2 Larkin, “Philippine History Reconsidered”, p. 620.
The sugar plantation as a business model

Sugar cane needs to be milled within forty-eight hours of being cut, otherwise it will lose most of its sucrose content. The fact that cultivation and processing need to take place in the immediate vicinity of one another allows for only two business models. The first one is that peasants have their own small plot of land, a collectively owned mill, and a set of boiling pans, enabling them to produce raw sugar on the spot. In theory, they can then decide to whom they sell their product: either to refineries in nearby towns – which was and still is to certain extent the case in India – or for their own consumption or as a currency in the reciprocal village economy. The second model is the plantation, which unites the agricultural and manufacturing parts of the process under a single leadership. Control, though not necessarily legal ownership, over land and labour is a prerequisite for large-scale processing of cane.

From the fact that there are only these two working business models available, and that the plantation is closely associated with colonialism, it would be misguided to think that “plantation sugar” was the global item and “peasant sugar” was just for local markets. As Mazumdar outlines in her book *Sugar and Society in China*, peasant-produced sugar played a prominent role in the global trade. This was equally true for Bengal as well as for China. Well into the nineteenth century, most of the global sugar production was peasant sugar located in India and China, a fact that has been more or less overlooked in much of the literature on the subject. Moreover, it was only in the final decades of the nineteenth century that industrial sugar-producing technology had become sufficiently developed to marginalize Chinese and Indian sugar exports and to conquer markets in Asia.

Indeed, the Western Hemisphere comprises just one leg of the global history of sugar production, which commenced in India, and via beet sugar, involved every single continent until mass sugar production with mechanical harvesting reached New Guinea (Irian Jaya) in the twenty-first century. The different locations and narratives of sugar production were linked to one another by a number of transfers of technology, dissemination and crossing of cane varieties, and migrations of planters. To follow the western leg of sugar production, after sugar making had reached Egypt at the time of the Arab Agricultural Revolution in the seventh and eighth centuries, its journey continued into the Mediterranean region at the time of the Arab Agricultural Revolution in the seventh and eighth centuries, its journey continued into the Mediterranean region at the time

3 See Mazumdar, *Sugar and Society.*
of the crusades. Here, the business model of the plantation run by coerced labour and slaves appeared for the first time, and sugar-producing islands such as Cyprus and Crete were ruled as colonial dependencies of Venice, which further traded the sugar into Europe. From the Mediterranean, the plantation model crossed the ocean, first to the Cape Verdan Islands, where in the course of the fifteenth century, sugar cultivation was introduced by the Portuguese colonizers who also imported African slaves to the island. Fifty years later, the Portuguese established their first sugar plantations in Brazil, again with slave labour.

In terms of the division of labour and technology used, the Caribbean plantation counts as not yet industrial, but definitely developing early within the context of emerging global capitalism. A sixteenth-century priest who visited a sugar plantation in Brazil saw hundreds of people drudging in a dehumanizing environment, with military discipline, to get the cane harvested and milled, and the juice boiled. He exclaimed that it was a “tropical Babylon”, the inverse of the holy city of Jerusalem, and therefore “indeed the image of hell”. In the seventeenth and eighteenth centuries, this model was further developed and technologically enhanced in the Caribbean region, by the Dutch and British planters. Marcel van der Linden suggests that the labour management of the sugar plantations had set a model for the labour management of the factories equipped with steam and steel that would emerge in nineteenth-century Europe.

In sum, since the days of the Venetian hegemony over the Mediterranean world, and the creation of the Atlantic world by different European colonial powers, the plantation has been a pivot of imperial production and trade, or as Dale Tomich puts it in a recent article: “World market and division of labour and social relations of production are integrated with one another through the institutional matrix of the plantation.” This observation is visibly true for early modern plantations, importing all their labour and implements and being satellites of European business, but it is in a different way true a few hundred years later in the age of high imperialism, when factories operated in a single global market and were tied to their environment by massive flows of seasonal migrant labour to carry out the cane cutting. The plantation did not disappear once colonial sugar production entered the era of mass production and transcended its insular character; plantations simply enlarged their span of political and social control. Sugar plantations

4 Schwartz, “Introduction”, p. 3.
5 Van der Linden, “Re-Constructing”.
6 Tomich, “Rethinking the Plantation”, p. 17.
developed into more or less contiguous plantation belts, which were united in so-called “sugar syndicates” for lobbying and marketing purposes.

Moreover, the existence of plantations was not restricted to the Western Hemisphere or to European enterprise. Chinese history shows us the contrary is true. After the Chinese Empire had lifted its ban on coastal shipping in the late seventeenth century, Southeast Asia became the site of a burgeoning Chinese sugar sector catering for the European and Asian markets. Increased demand furthered the dissemination of technological innovations, such as more powerful mills that were capable of pressing more juice from the cane, which in all likelihood were copied from the Portuguese or the Spanish. The enhanced mills paved the path for the emergence of Chinese plantations on islands just offshore of the Chinese coast, where sugar manufacturing was carried out by labour gangs, termed kongsis, in which the migrant workers chose their leaders from their midst and shared in the profits made. This method of cane processing was further spread throughout East and Southeast Asia. Up to the nineteenth century, Cochin China (modern-day Vietnam), Siam, the Philippines, and Java were sites of Chinese sugar production, and even the British attracted Chinese labour gangs and sugar millers to their settlements of Bengkulu and Penang in the late eighteenth century.

When the Dutch arrived in Java by about 1600, Chinese sugar millers were already present. Although the VOC encouraged the latter’s business, it also tried to create its own Caribbean-style sugar islands in Asia. After the Dutch lost their Brazilian possessions to the Portuguese in the 1650s, the VOC hoped to transform Mauritius into a sugar colony. However, it encountered major problems importing sufficient numbers of labourers who were capable of growing and processing cane, and was furthermore seriously constrained by adverse weather conditions. It was only under French and British rule that Mauritius became an important sugar producer, employing respectively slave and indentured labour.

In any case, the attempt by the VOC to establish a sugar island in the Indian Ocean region fits the pattern that practically all pre-1800 sugar plantations were located on small islands or colonial enclaves, where control over land and labour, as well as political institutions and links with

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7 Marks, Tigers, Rice, Silk & Silt, pp. 163-194.
8 Mazumdar, Sugar and Society, pp. 152-153, 157. See also Sabban, “L’industrie sucrière”.
9 “Witness Examined – Henry Botham”, p. 134. The British must have been aware of the skills of the Chinese sugar millers because, after they had taken possession of Penang in 1786, they invited them to set up plantations on their new acquisition. For sugar manufacturing in Penang, see Low, Dissertation, pp. 49-58.
10 Coombes, A History of Sugar Production, pp. 3-7.
markets, were secure. Competition with other crops and markets would jeopardize the regular input of cane, and was therefore almost prohibitive of plantation-style sugar production. The value of the insular plantation as a business model in Asia is also demonstrated by the fact that the Chinese had their “offshore” plantations throughout Southeast Asia. And again, it is not coincidental that in the 1630s, the VOC started sugar production in Formosa (Taiwan) in collaboration with a Chinese entrepreneur who was based in Batavia, which is a good example of how both Europeans and Chinese had a preference for insular environments in which to start sugar plantations.11

Eventually, the VOC concentrated its sugar production neither on Mauritius nor on Formosa, which it lost in 1662, but in the colonial enclave south of Batavia (the Ommelanden), where the land was privately owned by Europeans who usually rented it out to Chinese millers. In addition to Chinese labour gangs, work in the fields around Batavia was carried out by bujangs (labour gangs of bachelors), who were wage workers arriving on their own initiative. Other labourers were engaged by paying village heads a recruitment fee, or by hiring bondsmen or peons from the Javanese nobility.12 In the seventeenth and eighteenth centuries, sugar produced by the Chinese entrepreneurs around Batavia – and increasingly further eastward along Java’s north coast – was traded by the VOC and found its way to West Asian markets.13

With the expansion of its sugar production along the coast of North Java, the VOC began to move away from the traditional plantation model. In terms of the absence of local peasant production and consumption of sugar, we can still speak about plantation-style production in Java, but control over land was only established around Batavia, and control over labour – and over the Chinese labour gangs, in particular – was precarious. Moreover, Chinese millers and the colonial state were not identical or overlapping agencies, as was the case in the sugar islands of the Caribbean, but had different interests. This became tragically apparent when the influx of Chinese migrant labour took on alarming proportions in the eyes of the Batavia authorities, prompting them to resort to deportation measures, and sparking off a revolt by the immigrants that ended in a general massacre of the Chinese in and around the city in 1740.

What the Batavia massacre shows, in as early as the eighteenth century, is that although the plantation model is not inexorably linked to slavery and not necessarily confined to secluded locations, the absence of these

11 Mazumdar, Sugar and Society, p. 85.
13 Reesse, De suikerhandel, vol. 1, pp. 169, 182-183; Mazumdar, Sugar and Society, p. 89.
conditions created conflicts about labour and land that would only be solved in favour of the European powers with the emergence of the modern colonial states a century later.

From the days of the abolition of slavery onwards, which coincided with sugar becoming a mass commodity, plantations would exhibit a wide spectrum of unit sizes as well as a range of labour relations. Moreover, and contrary to what was accepted as fact until relatively recently, new technology did not necessarily bring about new labour relations. In Cuban factories, slaves could be found working machines alongside British engineers. In fact, the Cuban sugar plantation complex, the remaining giant in the Caribbean, would continue the trajectory of the classical plantation as it had emerged in the Mediterranean region. Cuba’s success was the logical terminus of a moving sugar frontier zone that had been travelling throughout the Western Hemisphere since the twelfth century. After having spread among the entire Mediterranean, cane cultivation practically disappeared from this area after 1600 as a result of soil exhaustion and deforestation. Sugar islands such as Cyprus, Crete, and Sicily were completely cleared of firewood for boiling the syrup.

Meanwhile, a seemingly inexhaustible frontier was opened up in Brazil. This happened thanks to the fact that improved refining technology made it possible to preserve semi-refined sugar for some months; long enough to carry it across the Atlantic. The economies of scale in the New World – fed by slave transports from Africa – referred to as the “New Babylon”, outcompeted the mills of the Western Mediterranean by about 1600. The story repeated itself in the course of the eighteenth century, when small Caribbean sugar plantations became as equally ecologically exhausted as their Mediterranean forerunners. However, technological progress in the shape of a series of boiling pans – termed the “Jamaica train” – enabled plantations to economize substantially on fuel. British investors turned Jamaica into the technologically most advanced sugar producer of the day, standing at the apex of pre-industrial sugar production. What remained, however, was the problem of soil exhaustion, which gave the larger and fertile island of Cuba, and Java for that matter, a decisive advantage in the nineteenth century.

For the ecological problems that were concomitant with sugar production on the Atlantic islands, see Halikowski-Smith, “The Mid-Atlantic Islands”, pp. 63-67.

For an overview of the innovations that were driven by high benefits and the constant threat of the depletion of resources in the Caribbean sugar industry, see Galloway, “Tradition and Innovation”.

Curry-Machado, Cuban Sugar Industry.
century. One may add that Cuba kept slavery, but that as such it did not entail a cost advantage.

Neither did the managerial unity of field and factory disappear in the nineteenth century. It is true that the technological advance of sugar factories reduced the number of mills, which led to the reduction of most plantations to cane farms. This concentration of milling in what were termed *centrals* severed the managerial unity between factory and field, which was the key element of the plantation. However, this was not a general phenomenon. On the contrary, in the eastern part of Cuba, American companies opened up a new sugar frontier in the early twentieth century, establishing formidable self-sufficient complexes. In the words of Hoernel, these “took care to avoid dependence on anyone or anything they could not control”.

In fact, Hoernel is just one author in a long succession since Mintz and Wolf “liberated” the concept of sugar plantation from being inherently linked to slavery. In addition to the twentieth-century American complexes in Cuba, those of twentieth-century Java and contemporary West India can be properly described as plantations. Together with the broadening of an understanding of what qualifies as a plantation, we have acknowledged that slavery and insularity are not intrinsic to the plantation. Nevertheless, once these two features were lost, plantations became subject to increasing interaction with their environment.

In the field of labour, this interaction is ideally captured by the phrase “peasants with one foot in the plantation and the other in the peasant holding”, an expression often used after Wolf and Geertz made similar observations for locations as widely distanced as the Caribbean region and Java. Sharecroppers and smallholders engaged in food production were also hired as wage workers at plantations.

In short, the plantation as a business model escaped from its initial confines of slavery and insularity, and by about 1800 proved to be adaptable to a diversity of labour relations and able to survive in societies that were not entirely plantation economies, as long as it could exert political control over these societies. Bosma, Giusti-Cordero, and Knight put it this way: “Like other agrarian formations, and surely more so than most, in plantation production labour form, crops, scale, and productive space are informed

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20 Breman, *Wage Hunters & Gatherers*, p. 214. Breman defines the constellation in West India as one that “closely approximates the plantation model”. Boomgaard classifies the Java sugar industry as a plantation system: Boomgaard, “Treacherous Cane”, p. 159.
by and inform a larger space of social production relations.”21 Again, in the political domain, the interaction became somewhat asymmetrical. In their drive to gain absolute control over land and labour, the large sugar complexes that were owned by bourgeoisies rooted in Java, Cuba Negros, or West India, deeply impinged on the political culture of their societies.

The sugar plantation and the Asian peasantry

The abolition of slavery and the simultaneous ascendancy of sugar as the largest bulk commodity in the nineteenth century in terms of value, went along with immense spatial relocations. Whereas in the early nineteenth century, Latin America’s share had been 85 per cent, it was only 47 per cent by the end of the century, most of which came from Cuba. Meanwhile, Asia's share rose from 6 to 39 per cent.22 Underneath this massive shift, there was a process of trial and error, in which the plantation could no longer rely on slavery and insularity and had to be reshaped to fit local conditions, as I discuss further on with regard to India and Indonesia.

While continental Europe developed its beet sugar industry, the colonial powers, such as Britain and the Netherlands, experimented with different ways of obtaining sugar from Asia. They either bought sugar from local manufacturers – as they did in Bengal – or from Chinese millers – as they did in Java or the Philippines – or tried to obtain cane from local peasantries, which they milled and boiled with the equipment that had been developed in West India. From the late eighteenth century onwards, Caribbean sugar planters brought their methods to the British and Dutch possessions in Asia. Although there were many locations in monsoon Asia where soil and climate offered perfect conditions for such transfers, most of them proved to be unsuitable for a variety of reasons, such as labour shortages and the fragmentation of landholding. Colonial powers, and the British and Dutch in particular, tried to change these parameters, sometimes with success but more often in vain.

Whatever policies colonial governments chose with regard to property rights, they could do little to change the fact that these continued to be solidly enmeshed in economic inequalities within the peasants’ communities. As Charlesworth puts it for the Bombay Presidency: “Even if the peasant agriculturalist remained the owner of his traditional holding,

22 Bairoch and Etemad, Structure, p. 79.
traders and moneylenders, through the operation of the credit and marketing systems, were, perhaps, able to secure growing proportions of the output.”

Another element concerns the market organization, which is termed the “bazaar” by Rajat Kanta Ray. The point he makes is that the colonial sector could not reshape local rural conditions into plantations, simply because it did not control the economy of the middlemen. It had to leave a substantial part of the economy to the bazaar: “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.” This situation is also described by Christof Dejung in his important study on the cotton trade of the Swiss house of Volkart. For this firm, as well as for any other global player in this business, it turned out to be impossible to control the cotton supplies and to suppress adulterations, even after the construction of railroads brought Europe to the doorstep of Indian rural life. One aspect of Dejung’s analysis is particularly relevant for sugar, as it alludes to the complex of a dense system of advances provided to cane cultivators. The East India Company (EIC) knew very well how this system functioned, and when it decided to increase its sugar exports to Britain in the 1790s, it did so by joining – rather than by trying to beat – the bazaar, and started to purchase refined sugar from Indian urban workshops, the khandsaris. The EIC gave a handful of West Indies’ planters some support to produce sugar the Jamaican way, but it did not expect much from these experiments.

The Dutch faced other problems in Java, which had great potential as sugar producer, but which was so distant from European markets that freight costs were almost prohibitive. Moreover, by the late eighteenth century, its Chinese mills in Batavia’s Ommelanden had reached the same ecological limits as the Mediterranean, and later on the smaller Caribbean islands, had encountered. Soil exhaustion, the disappearance of the forests needed to provide the wood for fuel, and the shortage of buffalos to grind and transport the cane, plagued the sugar millers around Batavia.

Firstly, the colonial authorities of Java sought to revive the sugar sector by introducing fuel-saving equipment from Jamaica. In addition, British and French planters came to Java shortly after 1800 to introduce the West Indies

23 Charlesworth, Peasants and Imperial Rule, p. 115.
25 Dejung, Die Faden des Globalen Marktes.
26 See Teisseire, Verhandelinge.
equipment, and a steam-driven mill was brought to Java by a British-Danish house accompanied by eight British technicians.27

In the 1820s, the expensive steam-powered milling equipment and improved boiling pans suffered from labour shortages, whereas the Chinese mills rapidly lost ground. The dwindling output of West Java could easily have been compensated for by East Java, where at that time, more or less spontaneously, a new sugar frontier emerged, dominated by Chinese merchants and Javanese nobility. Another available alternative was the Dutch sugar colony of Suriname. History would unfold differently through the agency of Johannes van den Bosch, the architect of early-nineteenth-century Dutch colonialism. His aim was to subsume the sugar frontier of East Java in a Dutch-led colonial economy, which he foresaw as having to compete with the Americas, where slave-run plantations could survive the abolition of the slave trade by improving the living conditions of the slaves, thus allowing the slave populations to reproduce. Moreover, the Americas had the considerable advantage of their shorter distance from Europe. Ensuring the longer term profitability of East Java’s sugar sector by creating a stable environment for the sugar factories was one, if not the most important, reason for Van den Bosch to introduce his Cultivation System (1830-1870).28

Under the Cultivation System, the colonial government took control of the supplies of cane to the manufacturers, who were obliged to invest in state-of-the-art equipment and to sell their sugar to the semi-governmental Netherlands Trading Society (NHM).29 The system was reinforced by the presence and key involvement of migrants from elsewhere in Europe and North America, backed up by British and North American investors and local Chinese capital. Furthermore, the Cultivation System relied on the collaboration of the local aristocracy, and most notably the village heads, who were assigned the tasks of supplying blocks of land and of implementing the system of labour conscription to feed the factories with cane. After forced cane cultivation was phased out in the 1860s, sugar factories became even more reliant on the cooperation of the village elites for regular cane supplies.

In fact, we can view the Cultivation System as a radical intervention, which limited the property rights of the peasantry, strengthened the power of the sugar factories, and connected the Javanese rural economy with the global markets. A key role in forging this connection was played by banking institutions – first the Netherlands Trading Society, and later on

28 Knight, “From Plantation to Padi Field”.
29 See Bosma, “The Cultivation System”.
the “cultivation banks” – which supplied the funds to pay for the advances to Javanese peasants to plant their land with cane. This system of advances subsumed rather than eliminated local systems of moneylending, often by wealthy farmers to poor ones.

A lasting legacy of the Cultivation System in Java, which enabled sugar factories without direct government intervention, was the “areaal” that encircled each factory and compensated for the fact that the factory did not own the land. Within a circle of a few miles, the factory was freed from competition by other factories or colonial cash crop producers, while leasing land from local farmers for cane cultivation. The circles or zones around factories, controlled by the alliances between factory and village elites, were an Asian approximation of the control over the field that had been exerted in the traditional Caribbean plantation model.

As long as the industry did not own the land on which cane was grown, its success was reliant on the symbiosis between rich farmers and factories. The wealthy farmers, or “big peasants”, commanded the necessary land and labour for the factories through the indebtedness of marginal peasants. The entire system was further beefed up by advances to peasants provided by the sugar factories, and supplied by the so-called “cultivation banks”. During the Cultivation System, the colonial government incurred massive costs for administration and fees for both indigenous and European civil servants, and in the case of sugar, its production only became profitable after more than a decade. Nonetheless, it was the massive changes in the institutional make up, in terms of labour and land allocation and financial infrastructure, that ensured the long-term competitiveness of Java sugar on the European, and later, the Asian market. The downside of this success was that via the systems of advances and indebtedness, hundreds of thousands of Javanese farmers were more or less coerced to relinquish their land, and often also their labour, to sugar factories against prices that were sub-economic. The profits went to the sugar factories and to the “big peasants” who had lent them the money.30

Different factor endowments but similar extractive institutions: Java and Cuba compared31

In terms of labour relations, Java and Cuba shared a relatively ruthless approach to labour mobilization and control. While the Cuban plantation

30 Bosma, The Sugar Plantation in India, pp. 176-177.
31 See Bosma and Knight, “Global Factory and Local Field”, and Bosma and Curry-Machado, “Two Islands, One Commodity”.
holders imported 780,000 slaves between 1790 and 1868, the Cultivation System had 700,000 to 800,000 households under its sway (about 35 to 40 per cent of the households in Java under direct government rule). In an age of spreading liberalism, both islands demonstrated that advanced modes of production could flourish with forced labour, which was against the grain of the purported nexus between capitalist development and proletarianization. Nonetheless, the sugar estates in both Java and Cuba increasingly employed wage labour, rather than respectively conscript and slave labour, and this particularly involved migrant labour during the harvesting season.

The difference between the islands of Java and Cuba, which are almost equal in size, is that Java’s population was about ten times larger than that of Cuba throughout the nineteenth and twentieth centuries. Java experienced massive demographic growth, leading to the quintupling of its population during the nineteenth century. Whereas in Cuba a surplus of land enabled expanding cultivation, but a shortage of labour limited the capability to exploit this; in Java, land was the constraining factor. In Java, the challenge was to obtain the maximum yield per acre. This was achieved by planting cane in sawahs and alternating it with paddy cultivation, thereby helping to prevent the exhaustion of the soil. While ratooning – taking harvests from the cane plants for a couple of consecutive years – was the rule in Cuba, for each harvest in Java, the cane had to be planted again. A massive (semi-)proletarian rural workforce that was dependent on by-employment to make ends meet provided the necessary labour force. By contrast, in Cuba the slave population was limited and in decline before slavery was eventually abolished in 1886. From the late nineteenth century onwards, hundreds of thousands of immigrant workers – mostly from Haiti, Jamaica, and other Caribbean islands, as well as from rural Spain – flocked into the Cuban cane fields. Though nominally free and not indentured, their actual working conditions were not much better than those of the slaves had been. The Cuban government had a clear preference for Spanish migrant workers, but was forced by American plantation interests to allow Jamaican and Haitian workers in.

Technological advances set the labour regimes of the sugar sectors even further apart from one another. In Cuba, the technological developments

32 The proportion of households involved in the Cultivation System declined over time, but 35-40 per cent is a reasonable estimate for the 1840s. See Bosma and Curry-Machado, “Two Islands, One Commodity”, p. 252; Fasseur, The Politics of Colonial Exploitation, p. 17.
33 Elson, “Sugar Factory Workers”; Knight, “Peasant Labour”; Bosma, “Discourse on Free Labour”.
34 Fuente, “Two Dangers, One Solution”, p. 34.
and investments in infrastructure in the early nineteenth century facilitated the opening up of new fertile frontier zones for sugar production, raising the output per unit labour.35 In Java, the opposite happened when the colonial government successfully created a semi-proletarianized workforce, a process, as stated, that was further engendered by rapid demographic growth. Even though this labour was not indentured, it consisted of labour gangs led by *mandurs* (foremen), who acted as intermediaries and subcontractors for the cane cutters, and who were often tied to the team through debt bondage. In late colonial society, many of these seasonal labourers came to the sugar belt in East Java from the relatively infertile and overpopulated island of Madura.36 Some of the immigrants were settled around the factory, to provide a basic stabilized workforce beyond the cane-milling season. Attempts by the colonial government of the Netherlands Indies shortly after the First World War to improve the conditions of the workers in the Java sugar industry were immediately rebuffed by the organization of sugar factories in Java, the Java Sugar Syndicate.37 Whatever the factor endowments were, and regardless of the nationality and ethnicity of the ownership of the sugar factories – in both Cuba and in Java this involved a mixture of local and metropolitan ownership – the sugar plantation conglomerates were capable of imposing their will on the colonial state, or as was the case in Cuba, the semi-colonial state.

The Negros sugar frontier

Both Cuba and Java provide examples of post-slavery plantations that no longer operated as insular units, but had much wider ramifications. They were, for example, linked to neighbouring islands through seasonal migration circuits, and were no longer satellites of European ownership, but acted as independent agencies – usually united in associations or syndicates – within a colonial context. The Philippine sugar island of Negros offers another example of the post-slavery sugar plantation belt, where sugar planters managed to turn pioneering smallholder cane cultivators into their indebted clients and transform the system into wage labour under

notoriously coercive conditions. In the process, they would establish their Sugarlandia.

The story of this modern sugar island has been thoroughly documented. After the Spanish authorities opened up the port city of Iloilo to foreign trade in 1855, the British established a vice-consulate, directed by Nicholas Loney. Described by McCoy as just an agent of the Liverpudlian textile workers, Loney embarked on an aggressive policy aimed at developing sugar production in Negros and retailing cotton in the Visayas, ruining the textile sector of Iloilo. Its textile entrepreneurs shifted their business to the west coast of the island of Negros, which was just twenty miles across the sea from Iloilo city, to become major landholders (hacenderos). Much of the land was cleared by immigrants from Iloilo. The hacenderos provided crop loans to these immigrant settlers against an interest rate of 25 per cent, which made many lose their land just one year after they had entered into their contract loans. If financial extortion did not work fast enough, the landlords would resort to using armed gangs. This way, the hacenderos grabbed massive amounts of land between the 1860s and 1880s, reducing smallholders first to tenants and then to sharecroppers. Whereas the cultivation of cane was preferably carried out by sharecroppers, for harvesting and haulage the planters relied on seasonal labourers, or sacadas, arriving in gangs of twenty or so men led by a kapatas (patron). As a matter of fact, this bifurcation of 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 factory.

In spite of the fact that the population of Negros almost quintupled from about 100,000 to 463,000 residents in the second half of the nineteenth century, labour shortages were endemic and the planters used a pass system, corporal punishments, and locking up the labourers at night to maintain discipline and prevent workers from running away to other plantations. Coercion and duress was the planters’ response to workers walking away with their advance without performing labour. However, planters and sympathetic officials did not succeed in convincing the American

40 Aguilar, Clash of Spirits, pp. 111-113; McCoy, “Sugar Barons”, p. 114.
41 Bankoff, “Wants, Wages, and Workers”, p. 68; Aguilar, Clash of Spirits, p. 128.
42 Aguilar, Clash of Spirits, pp. 126-127.
administrators in Manila that plantation bosses should be allowed to hold on to passports and maintain their own rural police.

The American administrators of the Philippines felt that the central government should not intervene directly on behalf of a private party in a matter in which the state had no part whatsoever. The illegal coercive practices employed by the planters on their labour force continued nonetheless, regularly meeting violent resistance from the oppressed workers. Moreover, it was not just that the central administration in Manila was too weak to reign in the sugar planters, the latter would even emerge as a dominant national political factor. It was exactly during American rule that the Philippine sugar industry was revamped into a small number of highly capitalized sugar-processing factories (termed Centrals), which came under the control of a tight network of Filipino sugar entrepreneurs who would rule the country for most of the twentieth century. They constituted, as Larkin has aptly called it, a Sugarlandia.

Indian and Indonesian sugar cooperatives: An alternative institution?

When India embarked on a trajectory of large-scale industrialization in the 1930s, it was after an earlier serious attempt a century before had ended in failure. At the time of emancipation of the slaves in the British West Indies, investment in steam-powered sugar production in India had looked quite promising. Within a decade, about eighty such factories emerged, but by the end of the 1850s, practically all sugar in India was again being produced as it had been for two thousand years; peasants grew cane on minute plots, which was ground by a collectively owned sugar mill. The juice was boiled on the spot into a brown mass, termed gur. White sugar was produced in urban workshops, khandsarises, which bought the gur from the peasants to refine it. Even after the 1930s, when the industrialization of sugar took off, the traditional way of making sugar and of sugar consumption continued to exist. The reason India was able to resist the global trend towards industrial sugar is that cultivators were used to working on small plots, and that in most of the country their property rights were solid enough to prevent both European and Indian capitalists from bringing together large plots of land to feed steam-powered sugar manufacturing equipment. This is of course an important caveat to the notion advanced by the institutional approach;

that weak property rights are to blame for the reversal of fortune of once relatively wealthy countries in the Global South.

It was only in the 1930s that the industrialization of the Indian sugar sector experienced a breakthrough. The government of India was the decisive factor, as it closed the Indian markets for sugar imports from Java and Europe in 1930. It did so to protect Indian cane cultivators, for whom this crop was an important source of additional income. Within a few years, over a hundred state-of-the-art sugar factories emerged in India, most of which were financed by Indian business circles. The format of the field-factory relationship of this emerging sugar industry was derived from Java during a trip by the Indian Sugar Committee to the island in 1920, where among other things it studied the areaal, the designated circle ensuring factories of their stable cane supplies. Some members of the committee became staunch supporters of introducing this system in India. However, because of the increasing political participation of the Indian National Congress in the country’s government, the idea became politically unfeasible, as it would simply throw the peasants under the thrall of the factories. Nonetheless, zoning was a prerequisite, as well as coordination between field and factory, for the viable industrialization of the sugar sector. In the course of the 1930s, the answer was found 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.

Nonetheless, the cooperative was not egalitarian, as the cases of India and in Indonesia unambiguously show. Whereas in the post-colonial development model the cooperative was presented as the breakaway from the plantation, in fact it was the terminus of long trajectory to unite field and factory through a coalition of the “big peasants” and the factories. The reason is that industrialization of cane processing required the subordination of the agricultural part of the process to the manufacturing part. Moreover, factories would only survive if they were able to prevent the cultivators from growing other – often more profitable – crops, or diverting their cane to other purposes such as peasant sugar, which was the case in India. Conversely, once the sugar factory controlled labour and land, it assumed many of the features of a plantation.

In Java, smallholder sugar production was advocated by Indonesian nationalists in late-colonial society and attempted under the presidency of Sukarno. However, the attempts by his successive governments to eliminate the role of the village elites and foster true smallholder cane cultivation, in which each individual smallholder had to contract with the factory, turned into a complete failure. In the Suharto era (1965 to 1997), the smallholder
model was reshaped into a cooperative structure to restore the synchrony between field and factory. The gist of this programme, called TRI (Tebu Rakyat Intensifikasi), or “intensified smallholder cane”, was, however, that in order to maintain a viable sugar industry, the cultivators simply had to be coerced to supply sufficient quantities of cane.

Hence, under the Suharto regime the central role of the village head in designating land for cane cultivation was re-established – as it was under the Cultivation System – and the village elites resumed their role of controlling land and labour on behalf of the sugar factories. Undoing the earlier attempts during the Sukarno years to escape from the colonial setting by encouraging smallholders to replace the colonial plantation, the institutional framework of sugar production under Suharto came cynically close to the Cultivation System.

For both India and Indonesia, sugar cooperatives were a way to transfer the plantation model into the new era of independence. However, the cooperatives could not even mitigate the inequalities that existed at the village level in Java and West India. In the Bombay Deccan, Asian societies were not egalitarian prior to the arrival of industrial sugar production in their villages. In contrast to what a long line of authors on rural society, from Van den Bosch to Geertz, have written about communalism and shared poverty, the realities were not egalitarian, and divisions were only sharpened under pressures from the sugar industries. The post-colonial cane sugar industries were either dominated by huge commercial firms working with wage labour, or by sugar cooperatives. However, in either model, immense armies of cane cutters had to be hired, while debt contracting was ubiquitous in the world's cane fields; in the Philippines, in Latin America, in Java, in West India, etc. Almost invariably, the arduous work of cane cutting was carried out by migrant workers from poorer regions on a seasonal basis.

Massive cane combines were first introduced in Cuba and the United States in the 1970s, and the system of engaging indebted seasonal labourers holds, as long as the cane cutters cost the factories less than mechanized harvesting.45 In West India, mechanization is a much more recent phenomenon, as it only commenced in the twenty-first century after cane cutters put up increasingly effective collective action against their exploitation.46 In Indonesia, the mechanization of the cane cultivation is part of the transfer of peasant-embedded cane production to the outer islands of the Indonesian archipelago, which entailed a full restoration of the insular plantation

46 Bunsha, “Machines That Mow Down Migrants”.
model. In Irian Jaya, large fields are exploited by a company that first burns the cane fields, to get rid of the unusable cane leaves, before sending in gargantuan cane mowers. The immense advantage for the Indonesian state is that this mode of production entails minimal social risks and no difficulties in finding an equilibrium between factory and field, as has been the challenge in the post-colonial Javanese countryside.

Large-scale cane processing requires a synchrony between field and factory, which could either be accomplished by the factory owning the field, as was the case in parts of Negros and Cuba, or by an alliance between “big peasants” and the factory against the smallholders. In India and post-colonial Indonesia, the cooperative was a vehicle to accomplish the latter. In both cases, sugar production was based upon sharp social inequalities, in which smallholders were reduced to being sharecroppers. The fate of the seasonal migrant labourers who carried out, and still do today, the arduous work of cane harvesting and haulage, was even more miserable. Again, since the 1970s, their room for negotiation has been seriously limited by the alternative of mechanization.

Conclusion

The traditional sugar plantation island, working with commodified slave labour, was the most efficient unit of production for sugar in the Atlantic region for consumption in Europe. Meanwhile, in Asia, peasant sugar – a mixture of household and commodified labour – was the dominant mode. In the Western Hemisphere, slave labour was considered to be part of the plantation’s capital and the absentee planters were capable of controlling the governance of their sugar islands thanks to their entrenchment in metropolitan government. This completely changed with the abolition of the slave trade in 1807, and the simultaneous ascendancy of sugar as a bulk commodity. While continental Europe developed its beet sugar industry, the colonial powers such as Britain and the Netherlands experimented with different ways of obtaining sugar from Asia. Indian peasant sugar, Chinese, or Mestizo Chinese plantation production in Java and the Philippines, as well as processing cane from peasants conscripted into cane cultivation; these practices all belonged to the early-nineteenth-century repertoire of sugar production in the British, Dutch, and Spanish possessions in Asia.

From the late nineteenth century onwards, the sugar factory would become the dominant type of production for the global market, with the important caveat that peasant sugar still made up half of India’s sugar...
output by the end of the twentieth century. Moreover, the factories no longer operated in the sequestered environment of the island or plantation, but had to deal with the colonial or semi-colonial state and the peasantry. Their strategy was invariably to use their formidable economic power to further their interests in the political realm, and where necessary to seek alliances with peasant elites to secure land and labour. Both India and Indonesia tried to escape from the predicament of the plantation as an extractive institution, but failed to protect the largest and most vulnerable segment of the labour force; the cane cutters who usually worked on piece rate. These states were not able to change the configuration so aptly termed “Sugarlandia” by Larkin; indeed the quintessential extractive institution. The history of the plantation shows its pliability as a business model and its “extractive” power, but also – as Acemoglu, Johnson and Robinson as well as many other authors before them have pointed out – the dependency of these institutions on already existing local social formations. This made the plantation as an extractive institution immensely powerful, but also set it within clear bounds. The plantation could only exist in Asia with the cooperation of the peasant elites. In this respect, secure property rights could either be a deterrent for the plantation as an extractive institution, or be its facilitator; it all hinged on the attitudes and interests of the local peasant elites.

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