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From royal family-based ownership to state business management: Mangkunegara's sugar industry in Java from the middle of the 19th to early 20th century

Wasino^a, Endah Sri Hartatik^b and Nawayanto^c

^aHistory Department, Social Science Faculty, Semarang State University, Semarang, Indonesia; ^bHistory Department, Faculty of Humanities, Diponegoro University, Semarang, Indonesia; ^cHistory Department, Faculty of Humanities, Jember University

ABSTRACT

This article discusses the dynamics of the sugar industry owned by an indigenous ruler of the Mangkunegaran principality of Surakarta from the mid-19th to early 20th century in Java, Indonesia. It draws mainly upon source materials from the Mangkunegara's collection in Indonesia and colonial archives in the Hague, Netherlands. The purposes of the article are to elaborate the development of the Mangkunegaran sugar industry, to look at how the business operated, and the strategies to run the business profitably and to deal with market fluctuations. It is argued that starting as a Javanese royal family plantation venture, the top management was on the hand of royal family aided by European managers. After the death of Mangkunegara IV, the efforts to build the economic foundations of the Mangkunegaran principality experienced a great shock. To get out safely from the crisis, a reorganization of the management of Mangkunegaran sugar industry was underway. The management was entrusted to the European superintendent at the top-level and European managers at the factory level. There was also clear financial separation between the sugar industry and the Mangkunegaran government (*Praja*). Interestingly, the process also involved the resident of Surakarta as representative of the Dutch colonial government.

KEYWORDS

Sugar industry; management change; Dutch colonial; state management; sugar production

1. Introduction

Sugar industry had operated in Java since the early decades of the 18th century. It was initially run by private Chinese and European businessmen around Batavia, and later spread to other parts of Java (der Mandere 1928, 4–5). In 1750 there were about 100 sugar factories, of which 80 were found in Batavia and the rest was found in Bantam, Cirebon, and the Java's northern coast (Mubyarto et al. 1992, 17). The number of sugar factories continued to grow on lands leased from the Dutch East-Indies Company (*Vereenigde Oost-Indische Compagnie/VOC*) resulting in an increase in number of factories in Central and East Java. In 1796 the Chinese businessmen controlled 1,134 villages and some of the obtained lands were used for sugarcane cultivation

(Kartodirdjo and Suryo 1991, 39). Under the so-called cultivation system, the sugar industry continued to thrive across the island and it became the Java's major export production system during the colonial era (O'Malley and Booth 1988, 200; O'Malley, 1988, 205–213).

Much scholarly attention has been paid to the sugar industry during the colonial period. One key issue in the academic debate is on how the sugar industry operated and impacted on the socioeconomic conditions of the society. A great number of studies argued that the development of Java sugar industry brought severe impact on the peasant economy and society. One key explanation in this view is that the operation of Java sugar industry was laid upon a low land rent and cheap labor policy (Kartodirdjo and Suryo 1991, 95; Mubyarto et al. 1992, 5; Elson 1984). Based on a case study of the Comal sugar industry, Husken (1996) argues that apart from cheap land rent and labor wage, the sugar industry imposed longer working hours and heavier workloads, and insignificant job opportunities (114–115). Boomgaard's (1996, 38) view sugar industry put farmers in a risk of experiencing more permanent subsistence crisis. But according to Van Schaik, sugar industry brought a mixed impact. On one hand, it brought an increase in farmers' vulnerability due to the restricted water access. On the other hand, it created jobs to landless peasants (van Schaik 1996).

Some studies offer an explanation for the development of the Java sugar industry into an efficient business venture. Boomgaard argues that under the cultivation system the constant expansion of the Java sugar industry involved a combination of three parties, the Javanese peasantry as the producers, the western enterprises as the processor, and the government as the trader. The industry became more efficient and competitive after the companies' shift from small, personal ownership to limited liability one after the 1880s crisis, run by professional managers and supported good research institution, improved cultivation technology and factory machinery (Boomgaard 1988, 160–166). Meanwhile, Van der Eng (1996, 217–219) suggests that the transformation of the Java sugar industry into an efficient venture resulted from continuous advances in production technology and management of production aimed at reducing production costs per unit of product. Major technological advancement included the application of chemical fertilizers and Reynoso soil preparation system, and the adoption of highly sugar producing varieties. The sugar processing was improved by modernizing factory's machinery to increase their productive capacity.

One major shortcoming of the above studies is that almost the entire studies focused on the western sugar industry. This has been drawn by long heated academic debate on the nature of colonial exploitation and the backwardness of formerly colonized societies. Too much focus on western sugar industry overlooks the fact that colonial sugar industry was not only run by the western companies, but also by the indigenous companies. The present article seeks to discuss the development of the Mangkunegaran sugar industry, a business venture owned by one of the four Javanese princes. The purposes of the article are to explain its organizational dynamics and corporate strategies to deal with market turbulences. The Mangkunegaran sugar industry is an interesting subject to discuss for several reasons. First, it represented a Javanese, royal family business venture. Second, one of its factories has also been described as the most luxurious sugar factory in the Surakarta and Yogyakarta principalities (Mansveld 1946). Third, the existing studies on the sugar industry owned by the Javanese royal families focused largely on the sugar industries of the Surakarta and Yogyakarta principalities sultanates, including Pakualaman (Houben 1994;

Bosma 2007; Sri; Margana 2007), but none discusses about the Mangkunegaran sugar industry. The studies also deal the subject almost exclusively from an economic history perspective, focusing broadly on commodity production systems and their distributions, rather than from an angle of business history, focusing on entrepreneurship and individual companies.

The present article, therefore, seeks to go deeper than the earlier studies by looking at the Mangkunegaran sugar industry as a business endeavor with theoretical inspirations taken from organizational theories. The importance of organization in explaining the success and profitability of firm has often been emphasized in the theoretical debates (Norton and Pittman 1988). Oliver Williamson (1971) categorizes two main forms of firm organization structure, unitary form (U-form) and multidivisional (M-form). The essential characteristics of unitary form company is the functional division as principal operating units of the company, whereas M-form company is characterized by the division of company based on the outputs produced. Alfred Chandler (1962) has demonstrated the development of M-form structure among the US companies in the 1920s in response to the growing problems of bureaucracy and communication as the companies grew larger with increasingly diversified products. The discussion of the present paper also takes inspiration from theoretical insights presented by Austin, Davila, and Jones (2017), arguing business in developing markets as an alternative business history, growing from different historical contexts of long foreign domination, state intervention, and institutional inefficiency. It is further argued that the peculiar contexts in which companies grow lead to the development of different organizational form of company and corporate strategies to deal with market shocks and uncertainties.

2. The emergence of Mangkunegaran's sugar industry

The term 'Mangkunegaran' has two meanings. First, it refers to a small principality (*praja*) ceded to Raden Mas Said after the Salatiga treaty in 1757. Mangkunegaran was (and is) one of the four Java's principalities, together with Kasunanan, Kasultanan and Pakualaman, which previously formed the Mataram kingdom of Java [see Map 1 and Map 2]. Second, it also refers to a socio-economic territory comprising all economic activities and inhabitants of Mangkunegaran principality. Before the establishment of sugar industry, there had been agricultural estates in Mangkunegaran focusing mainly on coffee and indigo cultivations (Wasino 2008, 44–45). Most of them were run by Indo-European land leaseholders granted by the ruler of Mangkunegaran. The coffee consignments from Mangkunegaran lands, ranging from 15.2% in 1854 to 50.6% in 1859, were much larger than those of Kasunanan's lands of Surakarta and Kasultanan's lands of Yogyakarta (Houben 1994, 280–281).

The initiative to develop sugar industry was taken by Mangkunegara IV, a Javanese prince with a strong entrepreneurial spirit. When inheriting the throne from his father, Mangkunegara IV also had to bear his predecessor's debts of more than f 250.000 (Houben 1994, 281). He had the big task of bringing the royal family out from the burden of debts and this motivated him to search for any possible avenue to solve the problem. The inspiration to run sugar business emerged when visiting his son-in-law, who worked for the Dutch administration in Demak (Central Java). During the visit, he found that sugarcane grew well in less fertile area like large part of his territory (Mansveld 1946, 34). The choice of sugar business was also based on two other considerations. Sugar was a favorite export

commodity with good prices in international market. This crop was also not new for him because it had been grown by European planters in Central Java at least for two decades. In addition, Mangkunegara IV was only successful in regaining control over lands suitable for sugarcane from his own royal family members in return for cash allowances, whereas he failed to regain control over lands leased by his predecessor to Indo-European leaseholders used mostly for coffee cultivations (Houben 1994, 282–283).

The plan of Mangkunegara IV to develop sugar industry got a full support from Manuel, his Dutch friend and the owner of indigo plantations in Baron area. Manuel convinced him that sugar industry could make a good fortune for Mangkunegaran principality. Manuel also advised him to divert the inhabitants of Malang Jiwan from palm sugar productions to sugarcane cultivations (Raad 1894). To bring his plan into reality, Mangkunegara IV appointed Raden Ranaastra, a Javanese aristocrat (*priyayi*) who had previously got an experience in organizing sugarcane in Demak, served as the district chief of Malang Jiwan. Considering its soil and water supply, Krambilan village of the Malang Jiwan district was chosen as a starting place. Mangkunegara IV also tried to get a license from the Resident of Surakarta, Nieuwenhuysen. Soon after the license was issued, the construction of sugar factory started (Pringgodigdo 1950, 48). On Sunday, 8 December 1861, the first stone of factory building was officially laid. The construction costed up to f 400,000. The largest proportion the fund came from the profits of coffee plantations, and partly loans provided by Be Biauw Tjwan, a Chinese major of Semarang (Raad 1894).

In 1862 the first sugar factory of Mangkunegara was ready to operate. In the opening ceremony, Mangkunegara IV named his sugar factory as *Colomadu*, meaning the mountain of honey [Plate 1]. As a royal family business, the top control of the factory was on the hand of Mangkunegara IV, but the daily management was entrusted to Robert Kamp. He held the position for eight years before being replaced in 1870 by his son, G. Smith. Kamp was later given a new task of managing the Mangkunegara's coffee plantations that needed a management reorganization (B Mangkunegaran Archive – MN-YN 992).

During the first harvest in 1862, the cultivation of 135 *bau* of sugarcane produced 6000 *pikul* [1 *pikul*= 61.7 kg] of sugar or 45 *pikul* per *bau* [1 *bau*= 7096.5 m²). The productivity of Colomadu factory was regarded as good because it was equal with that of Java in general (Gonggrijp 1938, 149). Beside for supplying local market, the sugar products were



Plate 1. Sugar Industry Colomadu (Malang Jiwan) in 1867.

exported to Singapore and Bandaneira. The distribution was handled by an intermediary firm, *Cores de Vries*. Sugar price in Singapore was *f.* 42 per quintal, whereas at Bandaneira *f.* 57 per quintal. With high prices of sugar, the Colomadu factory was able to make good profits and provided a lucrative source of revenues for Mangkunegara (Pringgodigdo 1950, 119–174). The debts spent for constructing the sugar factory was paid off in 1870 (Mangkunegaran Archive-P 1761).

With the success of the Colomadu sugar factory, Mangkunegara IV wanted to have another factory, named as Tasikmadu, meaning the lake of honey. It was built in Sandakara village of Karanganyar district. The area was a lowland located on the west slope of Mount Lawu or at the eastern of the capital. On 11 June 1871, the construction began and completed in 1874. The area of Tasikmadu sugarcane planting was 200 *bau*, covering two villages near the factory. The management of this sugar factory was under the command of Mangkunegara IV, and to carry out the daily work, H Kamp was appointed as its administrator in 1874. The production of Tasikmadu was irregular, only went on when the coffee production generated less profits. The production was more regularly carried out after the factory management had a consignment contract (*Consignatie Contract*) with the *Nederlandsche Handels Maatschappij (NHM)* in Semarang. Since then, the NHM provided capital needed for the production process of the factory (Pringgodigdo 1950, 49).

As the demand for sugar in the world market continued to grow, the Mangkunegaran sugarcane cultivations also expanded. The cultivations were not only carried out in Karanganyar but extended to other areas as well. For example, it was reported that the lands of Kutuan, which were previously brought under indigo cultivations, were converted into sugarcane production. In contrast to the growing demands for sugar, the demands for indigo were in sharp decline (Mangkunegaran Archive-P 1760, 4–6). The use of indigo as coloring substance in the textile industry was replaced by the artificial colouring materials, which grew fast in popularity. The conversion into sugarcane cultivations was a diversification strategy to cope with turbulence linked to the unexpected world commodity markets.

Both the Colomadu and Tasikmadu sugar factories were run with a modern management and equipment. Even though an indigenous venture, the factories were professionally managed by employing European managers. The factories already used steam power machines and were continuously modernized in the course of time new machineries were adopted such as the installation of *double effect* (1873), and *tripple effect* (1875), as well as the installation of *carbonatie* (1876). The development of Mangkunegaran sugar factories coincided with the spirit of modernization in the Netherlands East Indies. The decision of Mangkunegara IV to establish sugar industry took place almost at the same time with the first construction of the Semarang-Solo railroad (Wasino 2008, 261).

The transportation of sugar products was greatly facilitated by the railroad. Initially, the transport of sugar products was carried out by horse-drawn carts (*cikar*). From the Mangkunegaran principality to Semarang port in the north coast of Central Java, it took about twenty hours and costed around *f.* 3 per *pikul* (Houben 1994, 287). Later, they were transported by wagon (*lori*) from the Mangkunegaran factories to the Kemiri railroad station, situated only 5 km north of the sugar factory. The first locomotive to pull wagon carrying sugar was purchased in 1883 (Mansveld 1946, 43–44). With railroad transport, the carriage of sugar products from Mangkunegaran to the city port of Semarang only took about three

hours. Not only did it cut down the length of time, the railroad also reduces significantly the costs of sugar transport.

The development of the Mangkunegaran sugar plantation based-economy under his leadership created a strong image that Mangkunegara IV represented himself as an entrepreneur-king figure. He performed well the two roles altogether in political and economic field, a capacity that was rarely found among the Javanese kings. His entrepreneurial skill grew with a background of the royal financial problem amidst the growing business opportunities generated by commodity demands from the world market. The way in which Mangkunegara IV organized his sugar business indicated a unitary form organization. The business was centrally managed as a single unit organized along functional division with top command on his hands as the owner of the industry. There was a strong reliance on his leadership, a situation that posed a big challenge when change in leadership occurred.

3. Economic crisis and the declining sugar industry

With the death of Mangkunegara IV on 2 September 1881, the Mangkunegaran plantation-based economy was in limbo. Two other events added an extra blow. The crisis in the early 1880s provoked the adoption of protection for *sugar beet* in Europe. As a consequent, sugar products from Java could not enter the European market and it seriously affected in the circulation of sugar in the domestic market. The supplies of sugar exceeded the capacity of the domestic market could absorb and as a consequent, large quantities of sugar were unsold. The widespread of *Citronella* disease attacking the sugarcane crops in the fields made the condition even worse. The production of sugarcane dropped remarkably, and the quality of canes was not good either (Pringgodigdo 1950, 60–61).

The revenues of the Mangkunegaran sugar factories declined sharply, by at least f 100.000 per year. Although the revenues generated from this sector were equal to 1 ¼ –1.5 tons of gold (Brooshooft 1889), the figures were only a rough calculation. In reality, the factories very likely made only small profits because in the sugarcane production system, land rent was not taken into account as the lands were owned by the ruler of Mangkunegaran. In addition, most of the labor wages, especially for planting, were excluded from the cost component because the jobs were performed as part of their obligations for using the prince's lands. In other words, the revenues generated from the sugar industry during the hard time could not cover the real costs of production (Raad report in P 1761).

The financial burden became much heavier due also to miscalculation. For expanding his sugar business, Mangkunegara V bought the Kemiri sugar factory from d'Abo. The factory was situated near Tasikmadu (Brooshooft 1889, 55). In 1880 the Kemiri sugar factory processed sugarcane grown on its own lands. When the crisis occurred, the factory temporarily stopped. Its sugarcane was later processed in the Tasikmadu sugar factory. But, the costs proved to be more expensive. The only way to carry sugarcane from Kemiri to Tasikmadu was by animal-drawn carts (*cikar*). When Rosemeier became the super-intendent of Mangkunegara's sugar industry, he forced the Kemiri sugar factory to process sugarcane in order to reduce transport costs. With limited equipment, in 1884/1885 this factory operated again and processed 3000 quintals of sugarcane grown on 20 hectares of its own lands and 50 hectares of lands leased from farmers. Roosemier's decision proved

to be a mistake. In 1886, it was realized that the factory was inefficient (Pringgodigdo 1950, 63).

All the difficulties made the Mangkunegaran sugar factories in trouble. To save his factories, Mangkunegara V sought helps from the colonial government. The proposal was submitted to the government in 1885 but the result was a rejection. It was seen as necessary for the colonial government to know first all the financial affairs of Mangkunegara. For this purpose, Resident of Surakarta A.J. Spaan proposed the formation of a commission to be chaired by the Assistant Resident of Surakarta. Beside of the families of Mangkunegara IV and Mangkunegara V, the commission would include all descendants of Mangkunegara II and Mangkunegaran III as its members to accommodate all interests, and a Dutchman would be designated as the secretary. According to the proposal, Mangkunegara's treasure could only be opened with two keys and one of them was kept by the prince's son. The small treasure for daily spending also had two keys, one of which was held by the secretary. The commission would be named as Board of superintendent managing the financial affairs, lands and belongings of Mangkunegaran (*Raad van Toezicht Belast met de Regeling van de Mangkoenegorosche Landen en Bezettingen*). The proposal, however, was rejected by Mangkunegara V based on the belief that it would open too much room for the colonial government to interfere the internal affairs of Mangkunegaran.

Finding no satisfying solution from the colonial government, Mangkunegara V was forced to look for any other helps from private parties in Semarang. Finally, by mortgaging his property that had *verponding* value of f. 519, 000, he was able to obtain a loan from the A.F.L Huygen de Raet at a value of f. 400,000. Mangkunegara V was also able get a loan from *Faktorij* as much f. 200,000 by mortgaging 290 shares of *Javasche Bank* and 100 shares of *Nederlandsche Handelmaatschappij* (NHM) inherited from his father. The loans eased the *Praja* budget in the fiscal year of 1885 (Pringgodigdo 1950, 65), but did not improve much the condition in the following year.

3. Colonial intervention and management change

In December 1886, the financial problem of the Mangkunegaran sugar industry was reported to have been so acute. The condition invited the colonial government to intervene and took over all the financial affairs of Mangkunegara. On 11 July 1887 Governor General van Rees made a decision that handed over the Mangkunegaran general affairs relating to revenues and expenditures to a commission, called as Finance Commission. The commission was chaired by the Resident of Surakarta, A.J. Spaan with commission members including Mangkunegara V, Prince Haria Hadiwijaya, Prince Harya Sumodiningrat, and Raden Mas Harya Brajanata. Acting as the secretary of the commission was W.F. Engelbert van Bevervoorde (Pringgodigdo 1950, 69).

There were Mangkunegaran aristocrats who opposed the Commission, one of them was Patih Jaya Sarosa. But with the insistence of the Resident of Surakarta, Patih Jaya Sarosa was eventually fired by Mangkunegara V and was sent to exile in Padang (Sumatera). The elimination of the anti-commission aristocrats made it easier for the Dutch colonial government to execute its plan for Mangkunegaran. On 3 March 1888, the Governor General in Batavia instructed Resident Spaan to follow up the commission's decision, regardless the prince's consent. Thus, Mangkunegara's economic affairs was fully taken over by the Resident of Surakarta. To handle the daily financial matters,

particularly relating to the Mangkunegaran companies, a superintendent directly responsible to the Resident was appointed by the Resident. The position was held for the first time by C.A. Rosemeier (Pringgodigdo 1950, 69–70).

Under the superintendent management, the Kemiri sugar factory, which had been closed since 1886, was revived in 1888. It was believed that the factory would be able to make profits because of having a strategic location, only about 2 kilometers from the Kemiri railway station. Another reason for reviving the factory was its machinery still in a good condition. The result, however, was not as expected. Only operating in a year, the factory was eventually closed down again (Pringgodigdo 1950, 77). Meanwhile, the Colomadu and Tasikmadu sugar factories were modernized by installing *Tripple effect* technology. With this equipment, the cost of firewood was expected to be cut down by up to f. 11,000 a year. The mill grinder of Tasikmadu factory was replaced to improve its squeezing capacity by 15%. The factory also installed five rollers. To increase its outputs, more lands were brought under sugarcane cultivation, as developed in Jetis and Wanalapa with a total area of 1,534 hectares.

Despite the improved equipment, the two factories, however, showed no significant improvement. This was despite the improved condition of factories (Soest, YN-992 bundles, Archives of Reksa Pustaka Mangkunegaran). There were no satisfying increases in sugarcane areas, outputs and productivity (Table 1 and Table 2). In 1884 the sugarcane cultivation of the Colomadu was 435 *bau*. In the following years, the area tended to decline, with the smallest area of 380 *bau* in 1887. Meanwhile, the sugarcane cultivation of Tasikmadu was 467.5 *bau* in 1884 and it declined to 281 *bau* in 1889. Its outputs were on the decline as well. In 1884 the sugar output was 33,463 *pikul*, but in 1889 dropped to only 12,286 *pikul*. A big blow to the sugar industry came in 1889 from the *Citronella* diseases destroying sugarcane in the fields. The factory was forced to spend a lot of money to purchase new seedlings from *Citronella*-free areas and opened a seedlings nursery in Karangpandan. The measures costed the company no less than f. 65,125.

Table 1. The Colomadu Sugar Factory Production in 1884 to 1889.

Year	Land area (<i>bau</i>)	Production (<i>load</i>)	<i>pikul/bau</i>
1884	435	33, 463	77
1885	435	34, 633	79.6
1886	430	36, 842	85.6
1887	380	28, 276	74.4
1888	400	21, 576	53.9
1889	400	14, 631	36.5

Source: Van Soest, *Memorie van den der Mangkoenegorosche toestand Suiker Fabrieken*, July 1890, p. 5.

Table 2. Sugar area and production of the Tasikmadu Factory 1884–1889.

Year	Land area	Production (<i>pikul</i>)	<i>pikul/bau</i>
1884	467.5	39,988	85.5
1885	543	34,356	63.2
1886	318	19,224	60.4
1887	302	20,432	67.6
1888	286.5	21,142	73.8
1889	281.5	12, 286	43.6

Source: van Soest, *Ibid.*, Pp. 5.

All efforts under the superintendent management for six years (1884–1889) practically yielded no satisfying results. The sugar industry was still in a debt of f. 200,000. This gave Resident Spaan a reason to remove Rosemeier from the superintendent position. Resident Spaan regarded him as less capable of leading the company and too easy to believe in good expectations and too wasteful (Brooshooft 1889). The position was later replaced by J.L. Bulp. This change, however, brought no improvement either. The burden of the company due to the growing debt interest was regarded as unbearable.

Seeing no good hope, Resident Spaan had a plan to sell the Mangkunegaran sugar factories. The Colomadu sugar factory was set for a price of f. 350,000, plus the land lease cost of f. 32,000 per annum, whereas the Tasikmadu sugar factory was set for a price of f. 300,000 with land lease cost of f. 30,000 per annum. Meanwhile, the Kemiri sugar factory was set for a price of f. 80,000 plus f. 10,000 for land lease cost. There were a number of bids, but their prices were regarded as too low. One of the highest bids was from the *Internationale Handels Credit Vereeniging Rotterdam*, bargaining for the three factories for f. 600,000 and f. 50,000 per annum for land lease cost. Another bid came from the *Internatio* with a price of f. 650,000 and f. 55,000 for land lease cost per annum. The two bids were rejected because of being considered too low to cover the debts (Pringgogidgo 1950, 82–83).

Before the issue was solved, Burnaby Lautier replaced A.J. Spaan as the resident of Surakarta from 1890 to 1894. Unlike Spaan, who wanted to sell the sugar factories, the new resident felt competent to manage the factories. His first policy was to establish a commission to investigate the performance of the factories. The chairman of the commission was van Soest, the former owner of Kali Bagor sugar factory, and C. van Heel, a professional manager of a sugar factory in Kartasura. The commission's task was to investigate all matters relating to the sugar factory, including cultivation, manufacturing, and supervision (Pringgogidgo 1950, 84–85). The results of the commission's investigation revealed that the major factors causing the decline of the sugar industry were the *citronella* disease outbreak, low price of sugar, and mismanagement of factory (Soest, 1890).

To improve the performance of the sugar industry, from 1 December 1890, Lautier began to reorganize the management of the Mangkunegaran sugar industry. He fired the long-standing managers of the Mangkunegaran sugar factory and replaced them with new managers who were deemed competent. The managers were assisted by competent sugar experts from Europe with good understanding of the intricacies of sugarcane and also had no connection with the former managers. The superintendent position was given to Van Heel. And Lautier also decided to repair the existing machinery. In 1891 the amount of money spent on repairing and exchanging the machine reached f. 12,500. The purchases of new machinery costed f. 8,833 and f. 12,303 in 1892 (National Archive of Indonesia (ANRI) bundle MGS 2916, 1892 no. 1522).

Resident Lautier also drew a clear line of working relationship between superintendent and manager, as stipulated in the regulation issued in 1892, with an approval of Mangkunegara V. Under this regulation, the task of manager was technical executor and improved the income of the factory. All important matters should be discussed with the superintendent acting as a representation of the factory owners. Sugar distribution through trade associations in Semarang should also be discussed with the superintendent. Even though the manager held the authority of factory, but final decision had to

be consulted with the superintendent, including the amount of wages that should be paid to workers. The dismissal of employees should also consult with the superintendent and Mangkunegara V (Mangkunegaran Archive bundle MN V 197).

The superintendent's supervision was tight. The managers were obliged to draft a report to the superintendent every ten days on the implementation of duties or 3rd, 13th and 23rd days of each month. The managers were also required to make monthly reports on their works. Although the administrators had subordinates to supervise the plantations, the responsibility of achieving the success of sugarcane cultivations remained on their shoulders. The managers had to do a lot of things to improve the quality of lands planted with sugarcane. A daily check had to be performed to keep the crops free from *citronella* disease.

During the leadership of the Resident Burnaby Lautier, there was a significant improvement in the Mangkunegaran sugar industry. In 1890 the area under sugarcane cultivations for the two Mangkunegaran sugar factories was only 615 hectares. In 1894 it grew to 745 hectares or an increase by 21%. Sugar output also grew from 29,678 quintals in 1890 to 53,182 quintals in 1894 or an increase by 23.5%. Sugar productivity also rose from 48.26 quintals per hectare in 1890 to 71.40 quintals per hectare in 1894. The improvement brought an increase in profits. Table 3 shows that the profits of the Mangkunegaran sugar factories in 1890 reached f. 419,962 and by 1894 it grew double to f. 860,723.

A new policy, however, was made in 1894 with the replacement of Resident Burnaby Lautier by Hora Siccama (1894–1897). The new resident appointed J.A.C. de Kock van Leeuwen, the former manager of the sugar factory of Japara, as the superintendent of the Mangkunegaran sugar factories. Unlike his predecessor, opting expansion as the way of making profits, the new superintendent saw efficiency and quality improvement as a more viable avenue. The efficiency was improved through faster harvesting and processing. The use of *beenzwart* was no longer needed and this reduced the production costs by f. 0.49 per quintal. The products also looked better and had higher prices. Initially, the products of Colomadu were classified as SS 13 and later became SS 16 with a price of f. 1.21 per quintal, whereas the sugar products of Tasikmadu factory were ranked one level higher with a price of f. 0.40 per quintal. Considering the steep increase in net profits of the Mangkunegaran sugar industry from f. 76,652 in 1895 to f. 230,570 in 1896, the new resident of Surakarta, De Vogel who replaced Hora Siccama came to a belief that the industry was already in healthy condition for it indicated a rising trend of net profits. In 1898 the sugar industry

Table 3. Gross profits, Expenditures, and Net Gain of the Mangkunegaran Sugar Industry 1890–1894.

Year	Gross profits (f)	Expenditure (f)	Net gain (f)
1890	419,962.54	360,654.83	59307.71
1891	527,569.97	455,280.27	72289.7
1892	591,644.06	542,520.73	49123.33
1893	632,351.99	640,215.07	–7863.08
1894	860,723.17	747,738.72	112,984.45
1895	699,452.83	622,800.32	76,652.51
1896	851,593.30	621,014.33	230,578.97
1897	715,149.18	531,961.29	183,187.89
1898	877,889.24	547 813	330,076.24.

Source: *Gewestelijke Jaarverslagen Betreffende Toestand van den Financien MN het Rijk 1890–1894.*

booked the highest net profits of more than f. 330,000 (Table 3). The industry was regarded as ready to enter a new stage in its development.

4. Under the state management

The management of Mangkunegara's sugar factories was officially returned to the Mangkunegaran royal government (*Praja*) on 1 June 1899 (Sidamukti, 34–49). The event strengthened the authority of *Praja* in financial and economic affairs. As the Dutch government representative, the Resident of Surakarta had the rights to deal only with political affairs. The position of superintendent grew stronger after Mangkunegara VI decided to manage separately the companies and *Praja's* financial affairs. The Mangkunegara's sugar factories practically were under the management of superintendent who also held the authority on the *Praja* financial affairs.

There was different interest between Mangkunegara VI and Resident of Surakarta in appointing a superintendent. Mangkunegara VI believed that the superintendent had autonomous rights in financial management and was expected to efficiently manage expenditures. But, the Resident obliged the superintendent to consult with him in determining the *Praja* budget. This often became a root of conflicts involving the superintendent, Mangkunegara VI, and Resident of Surakarta. The residents of Surakarta, from GF van Wijk (1909–1914) to F.P. Sollewijn Gelpke (1914–1918), made efforts to reduce the role of the superintendent, that in their views, as too powerful. The two residents wanted to have the rights to intervene the budget of *Praja* Mangkunegaran. The efforts succeeded after Mangkunegara VI was replaced in 1916 by Mangkunegara VII as the ruler of Mangkunegaran principality. Since then, the budget of *Praja* Mangkunegaran had to get approval from the Resident before being implemented. At the same time, the authority of superintendent was restricted to only running the companies and no rights to deal with the *Praja* Mangkunegaran.

During the reign of Mangkunegara VII (1916–1944), the financial separation between *Praja* Mangkunegaran and the companies became more obvious. Mangkunegara VII and Resident could no longer intervene the companies. All Mangkunegaran companies were organized under the Funds of the Mangkunegaran Principality Properties (*Fonds van Eigendommen van het Mangkoenegorosche Rijk*). The management of the Funds was at the hand of the Management Commission. This commission consisted of the chief of the Mangkunegaran royal family as the chairman, an European superintendent appointed by the Governor General, and Dutch civil service officers appointed by the Resident. The daily activities of the Commission were run by the superintendent (Harloff 1922). In 1920 the Dutch Government's accounting officer was entrusted to perform technical supervision of the bookkeeping of the Funds. Apart from overseeing accounting problems, the officer also gave advises on the annual report of the Funds. The report could only be approved and submitted to the Resident after improvement made as suggested by the officer.

In line with the improved management, the Mangkunegaran sugar industry experienced an increase in cultivation area and production. Lands brought under sugarcane cultivations were not only found in the Mangkunegaran territory but also extended to the Kesunanan region on a land lease basis. Table 4 demonstrates that the Tasikmadu's sugarcane cultivations experienced a significant growth. In 1911 the lands devoted to sugarcane cultivation already reached 693 hectares, while in 1895 was only 373 hectares

Table 4. Cultivation Area and Purchased Sugarcane of the Tasikmadu Factory 1911–1917.

Year	Sugar Cane Crop own			Quantity of sugar cane purchase (quintal)	Total cane milled (quintal)
	Total area (hectares)	Results sugar cane (quintal)	Average results of sugar cane/ha		
1911	693	523, 159	754	28, 001	551, 160
1912	785	874, 901	1,114	84, 285	959, 186
1913	979	1,319,066	1, 347	180, 770	1,499,836
1914	966	1,309,779	1,355	205, 329	1,515,108
1915	969	1,213,825	1,252	190, 882	1,404,707
1916	1040	1,386,163	1,332	256, 276	1,642,439
1917	1028	1.24706 million	1,213	373, 681	1,620,741

Source: Pringgogidgo, *op.cit.* p. 127

(Pringgogidgo 1950, 103) or an increase by 86%. From 1911 to 1917, lands under sugarcane continued to increase with the highest figure of 1,040 hectares in 1916.

Besides their own grown sugarcane, the factories also processed sugarcane purchased from other places. The quantities of sugarcane purchased from other areas increased from 28,000 quintals in 1911 to more than 373,00 quintals in 1917. The quantities of sugar ouputs increased too. In 1911 the factories produced 523,159 quintals of sugar and by 1916 the sugar outputs reached 1,386,163 quintals. The statistical data for the Colomadu sugar factory are scanty, but it presumably shows a similar trend. Plate 2 is an example of sugarcane cultivation of the Colomadu in 1924.

Several efforts were made to improve the quality of sugarcane. The management paid serious attention to technical aspects of cultivations such as seedling selection, hole-making, irrigation, diseases and pests eradication, especially *Citronella*. For controlling the disease, a periodical checked was run and chemicals were applied as indicated in a letter from the manager of Colomadu in August 1927 to R.K.A. Bettsch, the chief of the Management Commission of the Funds. Not only sugarcane cultivation was improved, the machines of the two sugar factories were renewed to increase the milling capacities and sugar outputs.



Plate 2. Colomadu Sugar Cane Estate 1924.

Table 5. Gains of the Mangkunegaran Sugar Factory 1899–1916 (x f. 1000).

Year	Sugar factory		Amount
	Colomadu	Tasikmadu	
1899	178.6	106.4	284.9
1900	191.4	55.5	246.8
1901	166.3	51.6	217.8
1902	180.3	57.6	237.9
1903	196.9	66.2	263.1
1904	202.4	125.9	382.3
1905	205.5	182.7	388.2
1906	214.8	173.5	388.3
1907	158.8	234.8	393.6
1908	227.3	211.4	438.7
1909	253.6	214.6	468.2
1910	287.6	214.8	502.5
1911	270.3	258.1	528.3
1912	383.5	153.6	617.1
1913	238.4	285.7	524.2
1914	272.4	417.4	689.9
1915	856.2	501.2	1,357.3
1916	1,344.2	1,136.1	2,480.2

Source: Annex to the *Fonds van het Verslag van het Eigendommen Mangkoenegarosche Rijk*, 1928, 1930, 1934; Pringgogidgo, *Ibid.*, 131.

Under the state management, the Mangkunegara's sugar industry was able to make increasingly large profits. As can be seen in Table 5, in 1900 the industry booked a profit of more than f. 246,000. By 1910 the profits grew sharply to more than f. 500,000 and continued to increase to f. 1,357,000 in 1915. The highest figure was reached a year later with a profit of more than f. 2,480,000. The profits were used for several purposes. Part of the profits was used to increase the venture capital, both for the development of the sugar factories and other businesses. Some were spent for allowances or salaries of the aristocrats, royal family and the *Praja* officials. There were also profits allocated to cover infrastructural costs, such as irrigation buildings and roads, and partly also spent as part of the corporate social responsibility like for building schools, leisure and sport facilities (Wasino 1994).

5. Conclusion

Traditionally, the budget of Javanese kings, including the rulers of the Mangkunegaran principality, was based on the traditional tributes (*upeti*) from the king's lands. Taking the example of western colonial sugar industry as inspiration, the Mangkunegaran royal family took an initiative to generate revenues for the kingdom by embarking upon sugar enterprise. This measure was a completely new feature, strikingly different from the old Javanese conception that prohibited the royal family from running business. Even though Mangkunegaran sugar industry formed an indigenous, family business venture and situated in the Javanese principalities, wherein political term the Dutch colonial government never directly ruled the territory, the Dutch influences were also at work in shaping the Mangkunegaran sugar-based economy. Mangkunegaran sugar industry was established as part of the policy of building economic foundations of the Mangkunegaran principality, on the initiative of an entrepreneur-king figure, Prince Mangkunegara IV.

There were market and natural environment factors that caused the development of the Mangkunegaran sugar industry was uneasy and it went closer into bankruptcy, especially after the death of its pioneering figure. A number of strategies were applied by his successor and his manager to save the industry, but gave no satisfying results. After the fruitless efforts and the problem became so critical, the colonial government eventually had to directly intervene the Mangkunegaran sugar companies and royal financial affairs. Under the European superintendents appointed by the residents of Surakarta, attempts were made to improve the performance of industry through organizational management change. Despite the different strategies were adopted under the different residents and superintendents, there was one clear feature that the intervention of the Dutch colonial government brought a shift in the Mangkunegaran sugar business from a royal family-based management to a state management. There was also a strict separation between the financial affairs of the sugar companies with the Praja Mangkunegaran. The process was also accompanied by technological advances in cultivation techniques, transportation, and sugar processing machinery. All the changes had made the Mangkunegaran sugar industry thrive and became the economic foundations of the Mangkunegaran principality.

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Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Wasino, Profesor in Indonesian History, obtained PhD in 2005 from Gadjah Mada University, Yogyakarta. Lecturer at the Department of History, Faculty of Social Sciences at the State University of Semarang, Indonesia. His research interests include business history and social history of Indonesia.

Endah Sri Hartatik, obtained PhD in 2016 from Gadjah Mada University, Yogyakarta, Indonesia and lecturer at the Department of History, Faculty of Humanities, Diponegoro University, Semarang. Her research interests cover social-economic history of Java, Indonesia.

Nawiyanto, Professor in Economic and Environmental history. He obtained Ph.D. in 2007 from The Australian National University, with research interests include economic, agricultural and environmental histories of Indonesia.

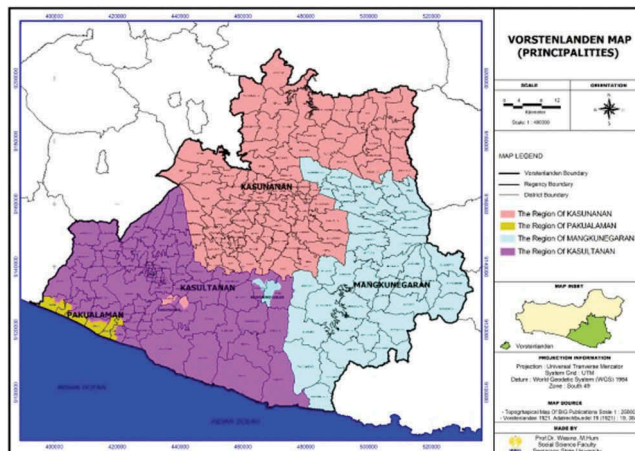
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Appendices



Map 1. The Principalities of Java.



Map 2. Division of Mangkunegaran Administrative Territory.