

Deli Maatschappij's Contribution to the Transformation of East Sumatera, 1869-1940s

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Abstract: Indonesian historiography notes that East Sumatra is known for its poor treatment of plantation companies towards their workers. Nevertheless, the presence of plantation companies also causes East Sumatra to grow rapidly. This study aims to uncover the contributions provided by Deli Maatschappij in transforming East Sumatra into a more modern one and its impacts on plantation communities and local communities. The study uses critical historical methods that include heuristic activities, source criticism, interpretation, and historiography. The approach of social science is used as an analytical tool. The sources used in this study include the Deli Maatschappij memorial books, magazines, and other sources from the period. The results showed that Deli Maatschappij had a significant contribution to East Sumatra's transformation process, primarily related to its role in changes in transportation systems, health services, water supply, and education. It can be concluded that the community also had a positive impact from these changes.

Abstrak: Historiografi Indonesia mencatat bahwa Sumatera Timur dikenal dengan perlakuan buruk perusahaan perkebunan terhadap pekerjanya. Kendati demikian, kehadiran perusahaan perkebunan juga menyebabkan Sumatera Timur berkembang pesat. Studi ini bertujuan untuk mengungkap kontribusi yang diberikan oleh Deli Maatschappij dalam mengubah Sumatera Timur menjadi lebih modern dan dampaknya terhadap masyarakat perkebunan dan masyarakat lokal. Penelitian ini menggunakan metode sejarah kritis yang meliputi kegiatan heuristik, kritik sumber, interpretasi, dan historiografi. Pendekatan ilmu sosial digunakan sebagai alat analisis. Sumber yang digunakan dalam penelitian ini antara lain buku peringatan Deli Maatschappij, majalah, dan sumber lain dari periode tersebut. Hasil penelitian menunjukkan bahwa Deli Maatschappij memiliki kontribusi yang sangat signifikan terhadap proses transformasi di Sumatera Timur terutama terkait perannya dalam perubahan sistem transportasi, pelayanan kesehatan, penyediaan air bersih, dan pendidikan. Dapat disimpulkan bahwa masyarakat juga merasakan dampak positif dari perubahan tersebut.

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INTRODUCTION

Talking about East Sumatra cannot be detached from the story of Deli. Since the success of Jacobus Nienhuys cultivating tobacco on the eastern coast of Sumatra, the name Deli became known in the world of international trade. Tobacco leaves as a cigar wrapper from Deli turned out to be highly enthused and highly appreciated in the world market, beating tobacco from Cuba and Brazil, so it encourages other foreign entrepreneurs to invest in Deli. Especially after the issuance of agrarian law 1870 by the Dutch colonial government that was intended to encourage foreign investment into the Dutch East Indies. The company that became the pioneer in Deli was Deli Maatschappij, a company founded by Nienhuys together with G.C. Clemen and Peter Wilhelm Janssen on 1 November 1869. This pioneering company



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transformed into a large plantation company that has a tremendous influence on the development of the East Sumatra plantation belt. Deli Mij was the pioneer for the emergence of other plantation companies, such as Senembah Maatschappij, Deli-Batavia Mij, Amsterdamsche Mij., the Tabaks-Mij. Arendsburg, and United Langkat Plantations-Mij (Thee, 1976).

Deli then became a dollar land, especially for plantation entrepreneurs. Unfortunately, the success and well-being achieved by these companies were not balanced with the welfare of their workers. Despite the taste and fragrance of Deli tobacco which was favored in the world, East Sumatra was also very famous for the cruelty of plantation entrepreneurs to their workers. Especially with the issuance of Coolie Ordinance since the year 1880, which also mentions *Poenale Sanctie*, a rule that greatly shackles the lives of plantation workers. It was no different from slavery practices. Even in 1930, the United States issued a new Tariff Act that prohibited the import of all goods manufactured based on forced labor or contract labor. In particular, this article targets the Dutch East Indies by applying the import embargo tobacco wrap if the *poenale sanctie* rules for East Sumatran contract coolies remains enforced. The mistreatment by the planters and the life woes of the laborers have been pretty much portrayed in Indonesian historiographies (Said, 1977; Pelzer, 1985; Breman, 1997; Sairin, 1997; Linblad, 1999; Stoler, 2005). These writings are described the forms of inhumane treatment of the planters who cooperate with the Government against migrant workers from both Java and China, as well as efforts of plantation entrepreneurs to defend the workers to keep working on their plantations.

The history of Deli in the colonial period seemed to contain only the cruelty of the planters and workers' misery. However, on the other hand, the presence of plantation companies in East Sumatra has also caused rapid development in the region, encouraging East Sumatra to transform into a modern and advanced area. Transformation is identical to change. Social transformation implies a fundamental notion of how society and culture change in response to factors such as economic growth, war, or political upturn. Polanyi mentions that major transformations occurring in society are caused by industrialization and modernization (Castles, 2001). Social transformation can be seen through the distribution of prosperity through equitable access to socio-economic resources such as education, health, housing, clean water, and the

ease of transportation facilities. The area of East Sumatra, which was once a wilderness area, was transformed into an open area connected between one area and the other with many roads and rail networks. Along with it, emerging new cities that later evolved into a big city, for example, Medan, Tebing Tinggi, and Pematangsiantar. Office buildings, communication networks, and schools are also experiencing rapid development (Pelzer, 1985). Deli Maatschappij, as the largest plantation company has certainly contributed to the transformation that occurred in the region.

In connection with these developments, some historians such as Wie (Thee, 1976) and Touwen (2001) have shown that the presence of plantation companies has a forward aspect of linkage and backward linkage. The forward aspect of linkage was indicated by the presence of other companies that use raw materials from plantation crops. For example, the emergence of a soap company that uses palm oil from plantations as its main ingredient. Meanwhile, the backward linkage aspect of the company plays an important role in economic development in the outer islands. For example, in infrastructure development such as rail, road, and seaport. This affects the local economy. Market access for local community production was improved through the availability of new transportation tools. Meanwhile, Ochsendorf (2018) gave an example of the impact of foreign company investments in health and sanitation services for indigenous Javanese and Sumatran people in the late colonial period in Indonesia. He mentioned that social investment by private companies is considered a form of corporate social responsibility as well as an effort to increase profits for the company. It is similar to Pelzer's published work (Pelzer, 1985). He mentioned that Senembah Maatschappij, which was a company that specialized in planting nutmeg and tobacco, was one of the companies in East Sumatra that conducts the development of the social field that improve the relationship between plantation entrepreneurs and their worker. Under the leadership of C.W. Janssen, Senembah Mij gave special attention to the education of the Javanese children who lived on Senembah plantations. Besides, Janssen also built a more decent labor housing and created the atmosphere of the Javanese village, as well as the important thing is its attention in the field of health, especially in the prevention of infectious diseases.

Based on the existing historiography, this study contributes to complement the previous historiography with the focus of the study on the role

of Deli Mij in East Sumatra. This paper wants to see the extent to which the role of Deli Mij as a pioneer and the dominant company in East Sumatra contributed to the transformation of the region. How was Deli Mij's contribution to improve infrastructure, especially in the field of transportation and provision of social capital such as schools and healthcare services such as hospitals and other sanitation improvements? To what extent of the positive impacts gained by the people of East Sumatra from the company? Before discussing the answers to these questions, it will be explained in advance about the development of Deli Maatschappij. This study does not intend to romanticize or to glorify the achievement of Deli Maatschappij, especially to progress in East Sumatra, but rather to present the historical facts objectively.

METHOD

This research uses historical methods, which is consisting of four steps namely heuristic, verification, interpretation, and historiography. Heuristics is the process of finding and collecting historical sources both primary and secondary. The process of source criticism is carried out by paying attention to statements in historical sources and comparing them with other sources. Some of the important sources used in this study are *Verlag van de Deli Maatschappij* (1919) which contains a progress report from the director of the Deli company including the number of plantations, land area, production, and company profits, *company statutes*, *Gedenkschrift* (Verster B. , 1919; Enthoven, 1929; Maatschappij, 1931) which are Deli Company memorial books. As a comparison, works from contemporary sources are used, including the works of Schadee (1918; 1919), Broersma (1922) , Blink (1926) and Volker (1928) on the history of East Sumatra, as well as other sources such as the magazine *de Ingenieur*, especially to explain the development of land transportation network development in the form of roads and railways in East Sumatra.

DELI MAATSCHAPPIJ

Deli Maatschappij was the largest and the most influential tobacco company in East Sumatra. The establishment of Deli Maatschappij began with the advent of Jacobus Nienhuys in Deli. Nienhuys was the son of an Amsterdam tobacco merchant and learned the tobacco cultivation in the Willem III Tobacco plantation. In 1863, he joined the Rotterdam Merchant Association led by P. van den Arend. Through the Van Leeuwen trading house, Nienhuys met an Arab descendant, Abdullah Bil-

sagih in Surabaya. Bilsagih sought to attract Dutch traders in Deli. He said that in Deli, many were planted with tobacco and pepper and that the Sultan of Deli was willing to donate land for the planting of tobacco. Interested in the story of Bilsagih, Nienhuys decided to go to Deli. However, apparently, the tobacco he was looking for was not there. Nevertheless, the Sultan of Deli, Mahmoud Perkasa Alam was ready to surrender a portion of the land covering an area of 2000 hectares which turned out later on the soil situation was very profitable. From the land of the sultan, Nienhuys tried to cultivate tobacco. The obstacles faced mainly were the problems of labor. The difficulty could be overcome when he could produce 50 packs of tobacco, each 80 kg in 1864, and this harvest resulted in an F 4,000 at auction in Rotterdam (Schaade, 1918).

In 1866, Nienhuys resigned from the van Arend because Van Arend no longer wanted to finance the business of Nienhuys in Deli, which was deemed not to have resulted in substantial gains. Nienhuys decided to seek funding support in Europe. Nienhuys managed to convince tobacco merchants in Amsterdam to set up a large-scale tobacco plantation in Deli. He received support from P.W. Jansen and Clemen. Thus, on 1 November 1869, the three of them established Deli Mij with an initial capital of F 300,000. Half of the share capital came from the Nederlandsche Handel Maatschappij (NHM) (Blink, 1926, p. 104). The first director of Deli Mij was Jacobus Nienhuys (1869-1870) and was later replaced by J.T. Cremer (1871-1873). Deli Company achieved great success. Under Straatman and Cremer management, the Deli company successfully expanded its expansion. Cremer's success was continued by Janssen who led Deli Mij for 25 years (1873-1898). Thanks to his diligence, trade knowledge, and extensive insight, Janssen managed to bring prosperity to Deli Mij (Schadee, 1918).

Starting with one plantation in Medan, Deli Mij expanded rapidly and continued to open several companies in the land they already have. For example, in 1873, it opened the Annidale, Kesawan, and Petersburg company, and in 1876, there opened the Budra company. All of which were based on the Mabar-Deli Tua land contract (Schaade, 1919). After the first harvest in 1870, Deli Mij was able to pay dividends by 20% and four years later, when the capital was raised to half a million in 1873 and reached a dividend of 80%. At that time, Deli Mij had seven companies. In 1884, Deli Mij had operated 12 companies: Mariendal, Medan, Petersburg, Tanjung Jati, Bandar Kalipah, Deli Tua, Kuala Begumit, Bekala, Belawan, Lubu Dalam, Bulu

Cina, and Kota Lambaru. With the increasing number of companies, the number of capital has continued to grow, from NLG 500,000 in the year 1873 to NLG 800,000 in 1876, and NLG 2 million in the year 1878. The main shareholder is the *Nederlandsche Handel Maatschappij* (Schadee, 1919).

Since the year 1885 capital expansion has continued to rise significantly (Schadee, 1918). Until the 1880s, the activity of *Deli Maatschappij* was still limited in the landscape of Deli, and since then expanded its working area to Langkat and Serdang. In this region, *Deli Maatschappij* has 120,000 hectares of land concessions (Blink, 1926, p. 105). In 1889, Tambunan was acquired by *Deli Mij* therefore *Deli Mij* also acquired *Kwala Merintjim*, *Lambiki*, *Namu Ukur*, and *Polonia* company. Other companies were purchased by *Deli Mij* include the company *Tuntung* (1887), *Batu Sangkahan* (*Deli Tuwa*), the *Batang Serangan* company in Langkat, and *Kwala Namu*, *Pungei*, and *Paya Bakung* Company in Serdang. In the year 1891 crisis, *Deli Mij* also bought the company *Helvetia*, *Bavaria*, and *Kota Bangun*. *Bavaria* was returned to the Sultan, while the company *Helvetia* and *Kota Bangun* were merged into one company under the name *Helvetia*. *Langkat Maatschappij* also had difficulties and sold his *Tanjung Slam* plantation to *Deli Mij*. In 1897, *Tumpatan* and *Kwala Namu* were sold to *Medan Tabak* for F. 120.000. In 1898, the *Batang Serangan* and the *Tanjung Slam* were merged into one company. In December 1899 *Deli Mij* obtained land contract of 30.000 bau in *Temiang*, and *Deli Mij* opened the *Sungai Sekrah* plantation, but because it did not produce good result the company was closed down (Schadee, 1919).

Until the year 1919, *Deli Mij* had 21 companies (Verslag, 1919). Each plantation has an administrator and 4 to 6 assistants. *Deli* company officers consisted of approximately 180 people including 4 doctors, with about 20,000 Chinese and Javanese *Kuli* (Encyclopaedisch Bureau, 1919, p. 117). In 1931, *Deli Mij* had 31 plantation companies consisting of 26 tobacco companies, 4 rubber companies, and 1 palm oil Company (DM, 1931, p. 6). The following is the plantation company owned by *Deli Mij*.

Based on the data above it is seen that tobacco is the main plant cultivated by *Deli Mij*. Besides selling its product, *Deli Mij* also sells tobacco from companies or other people through consignment in the Amsterdam market. The consignment company originated from the cultivation of tobacco in Deli and the ups and downs of prices according to the business cycle. At that time, the consignment com-

Table 1. Plantation Owned Deli Mij Year 1931

Location	Plantation Name	Plant type
Deli	1. Medan	Tobacco
	2. Sampali	Tobacco
	3. Bandar Klipa	Tobacco
	4. Mariendal	Tobacco
	5. Deli Toewa	Tobacco
	6. Bekalla	Tobacco
	7. Belawan	Tobacco
	8. Toentoengan	Tobacco
	9. Helvetia	Tobacco
	10. Arnhemia	Tobacco
	11. Rimboen	Tobacco
	12. Rotterdam A	Tobacco
	13. Rotterdam B	Tobacco
	14. Paya Bakong	Tobacco
	15. Boeloe Tjina	Tobacco
Langkat	1. Tandjong Djatti	Tobacco
	2. Kwala Begoemit	Tobacco
	3. Loeboe Dalam	Tobacco
	4. Poengei	Tobacco
	5. Kwala Bingei	Tobacco
	6. Kwala Mentjirim	Tobacco
	7. Namoe Oekoer	Tobacco
	8. Namoe Trassi	Tobacco
	9. Bekioen	Tobacco
	10. Soekaranda	Tobacco
	11. Tandjong Bringin	Tobacco
	12. Batang Serangan	
	13. Soengei Litoer	Rubber
	14. Tandjong Slam	Rubber
	15. Tandjong Keling	Rubber
	16. Sawit Sebrang (Coconut plantation and oil factory)	Oil palm

Source: N.V. *Deli Maatschappij*, *Hoe Zij Onstond en Groeide*, Medan: *Deli Courant*, 1931, appendix 1A, without a page.

pany for *Deli Mij* was limited to the following companies: *Senembah Mij*, *Medan Tobacco Mij*, *Shanghai Sumatra Tobacco Company*, *Tjinta Radja Tobacco Mij*, the *Wampoe Tabacco and Rubber Estates Ltd.*, *Bah Lias Rubber and Tobacco Plantation*, and *Rimboen Tabak Maatschappij* (Encyclopaedisch Bureau, 1919, p. 118).

In addition to tobacco, rubber is also a commodity crop produced by *Deli Mij*. Long before the general attention was given to rubber cultivation in the Dutch East Indies, *Deli Mij* had planted *Ficus Elastica* in several plantation companies, including *Tanjung Selamat*, *Langkat*, which was suitable for rubber cultivation. The area of plantation land reaches approximately 47,310 Ha. Rubber planting at the *Tanjung Selamat* Company at the end of the year 1915 covers about 1,500 smells planted with 250,500 *Hevea* trees and 66,000 *Ficus* trees

(Encyclopaedisch Bureau, 1919, p. 117). Only then, after the year 1907 rubber cultivation (*Hevea brasiliensis*) was systematically introduced in various other plantation companies (Blink, 1926). A total of 1,154,630 *Hevea* trees were planted on an area of 5,620 hectares in four of the company's rubber plantations. Palm oil is planted on an area of 3400 hectares with a total of 163,000 trees (Deli Maatschappij, 1931, pp. 13-14).

With the discovery of oil resources in Langkat, the interest in East Sumatra's investment is increasing. To keep the other investors away from the land of Deli and to remain a host there, then Deli Mij requested and obtained a permit mining investigation in the land of their concessions. Gold and tin materials are not found, while coal is found in the upstream of Batang Serangan and Sungai Besitang in a number that is not possible to be exploited. In the year 1895, drilling for petroleum was also carried out in Batang Serangan. Deli Mij obtained a major oil contract in Langkat, south of Aru Bay, but the oil produced was only in small quantities so that it cannot be exploited. The drilling was discontinued in 1901 (Schadee, 1919). Thus, practical Deli Mij concentrates only on the company plantation.

TRANSPORTATION NETWORK PROVISION

As a company with a large plantation product, Deli Mij has an interest in fast access to the seaport. Because the colonial government did not invest in the provision of transportation networks, the initiative was taken over by the private. Deli Mij built the road from the main city of Labuan to Medan and a few kilometers to the south. Another way leads to Pulu Brayan, to Koniggratz, and reaches Arendsburg (Klumpang) and to Padang Bulan. Deli Mij uses asphalt roads for the carriage of its products that can be passed by the train at least in the rainy season (Schadee, 1918). In 1880, Deli Mij built a 10 km road between Medan and Sunggal and other 20 km roads from Lubuk Pakam to Bangun Purba

In 1906, the Dutch colonial government then continued the construction of highways after road development was carried out on private initiatives. The highway is built parallel to the coast from the border of Aceh through the towns of Pangkalan Brandan, Tanjung Pura, Binjai, Medan, Lubuk Pakam, Tebingtinggi, Kisaran, and Rantau Prapat. Until the year 1918, there has been a road network of 500 km that connects major cities in East Sumatra. In the area of Karo Highlands and Simalungun also carried out road construction. Road construction caused rapid changes in Karo society, including the use of transportation equip-

ment. Cow carts were introduced in 1909 and within a year the number had reached 100, and the year 1918 had reached 1000. Then also appeared car as a new transportation tool (Zeilinger, 1933). Road construction facilitates communication between villages. From an economic standpoint, this road was very important for the transport of the agricultural product from Simalungun. This road also functions as traffic for migrant workers from the Toba area to the plantations of East Sumatra. (Tideman, 1922).

The growing number of plantation products led to the need for fast and efficient transportation, which could transport plantation products to the port. Therefore, the Deli Mij through J.T. Cremer, on July 4, 1881, asked for concessions for the construction and operation of Railways on the east coast of Sumatra. To realize the railway network in Deli, Deli Mij established Naamlooze Venootschap Deli Spoorweg Maatschappij (DSM) as its subsidiary on 28 June 1883 in Amsterdam. The initial development of the DSM depends on the ups and downs of the tobacco industry. The first train line is Medan to Belawan, Deli Tua, and Timbang Langkat. The expansion of the next railway network was to the south, from the Deli area to Serdang and Selese. Meanwhile, plantation companies from 1886 also built their feeder lines to connect the plantations with the DSM trains (Verster, 1929). The most common way to accomplish this is by constructing a narrow railway line that does not require concessions, using a width of 0.7 m. Sometimes the DSM provides subsidies for the construction of these pathways because they are beneficial for the exploitation of their trains.

Overall, the railway line in East Sumatra reaches approximately 544 km with the following details: Railway lines include Medan-Belawan, Medan-Timbang Langkat, Medan-Perbaungan-TebingTinggi-Tanjung Balai-Teluk Nibung, dan Tebing Tinggi-Pematang Siantar. Meanwhile, the tram lines include the lines: Medan-Batu, Timbang Langkat-Kuala, Timbang Langkat-Tanjung Pura-Pangkalan Brandan-Besitang-Pangkalan Susu; Lubuk Pakam-Bangun Purba dan Kampung Baru-Arnhemia. From Arnhemia, there are bus and car services from DSM to the Karo Highlands. For the Southern Railway line, there is a specificity characterized by the fact that during the first five years after the concession was given, the railway line was used only for the carriage of goods (*De Ingeieur*, 1934).

Apart from the main purpose of railway transportation development for the economic inter-

ests of plantation entrepreneurs which in this case was for the transportation of plantation products, the construction of rail transportation network has also opened access to areas in East Sumatera that were isolated into open areas. Therefore, local people can interact with communities outside the region more easily. The DSM also attracted public interest to travel by train. Before the year 1900, passenger transport accounted for nearly half of the train's revenue. In 1890, the first year of operation for 100 km of railways was opened to the public by the DSM, and as many as 1 million passengers were transported. The distance traveled on average is less than 16 km, which means that most passengers travel from their hometown to the nearest market as the economic center of society. Besides, the DSM also transported workers traveling daily to and from the port of Belawan. Train transportation also transports school children. Trains depart at 6 hours transporting school children from Perbaungan, Lubuk Pakam, Batang Kuwis, and Bandar Chalipah to Medan. On Eid Mubarak, DSM also became a mass transportation device because at that time many people traveled to visit relatives (Meijer & Heckler, 1987).

HEALTH CARE SERVICES

Plantation entrepreneurs started to make improvements in the field of health especially because of the high mortality rates among plantation workers. In an area that was almost exclusively hiring a contract, then illness and death were financial losses for the plantation company. As an overview of the mortality rate, in 1901 from 93,468 contract labors the 4,403 of who died or 44 per thousand people for a year. Oschendorf (2018) identifies several factors that led to the high mortality of plantation workers. First is a less hygienic plantation environment. Secondly, poor labor recruitment process is giving rise to infectious diseases such as cholera, tuberculosis, pneumonia, and influenza as the leading cause of high death in plantations. Inadequate health care is also another factor that contributes to the spread of the disease.

The health condition of coolies in East Sumatra experienced a decline in the years 1872 to 1884. Many workers in plantations were dying from disease outbreaks. Several times there was a cholera epidemic. In a report in 1876, the outbreak occurred twice, and as many as 213 coolies in Deli hospital that suffered cholera died. In 1884, a malignant cholera epidemic was back in place (Schadee, 1919). It was concluded that this cholera outbreak was carried by coolies from China. These

coolies had to be quarantined so as not to spread the plague massively. To prevent transmission, at the initiative of plantation entrepreneurs including Deli Mij, DPV established a temporary quarantine building consisting of 21 barracks that can accommodate 600 immigrants. The temporary quarantine station was built in 1899 in Poeloe Berhala, Serdang Bedagai, and offered to the government for free on the condition that it would soon be established a permanent quarantine station (Modderman, 1929).

In 1901, there was a cholera outbreak with a death rate reaching 40 people per 1000 people in Deli. According to a doctor's report on 15 January 1901 of 196 cholera patients 68 people died, 56 cured, and 72 in the treatment; Additionally, on 26 January, the disease had swallowed 120 victims of a total of 500 emigrants. Medan, Labuhan, and Belawan were considered to be exposed to cholera epidemics, so quarantine was done. The migrants after the medical examination were sent to their respective companies and isolated for 8 to 10 days and remain under the supervision of the Officer (Modderman, 1929). In 1903 the company of Senembah brought a microscopic researcher from Germany called Dr. W.A.P. Schuffner to research the diseases that plague the plantations. With the help of Dr. Maurer of Deli Mij and Dr. A. Kuenen from Senembah Mij researched to find out the poor health relationship with the local area. It was concluded that the prevention of the epidemic was indispensable

To overcome this problem, the planter then built a quarantine station in Pulu Brayon to prevent a massive spread of cholera outbreak. For that purpose, Deli Mij handed over its land in 1910, and the quarantine station was completed in the year 1911 (Verster, 1919). All costs and responsibilities for quarantine were charged to the company of the owner. Awareness of sanitation was mainly determined by the enforcement of strong quarantine regulations. To improve health in general, newly recruited coolies from Java or China were examined at the recruitment site. They were examined by quarantine doctors and when suspected of carrying some infectious diseases directly brought to large and modern quarantine facilities (Bureau, 1919). The quarantine station established by the Planters' Association was then taken over by the government. Every vessel carrying coolies arriving from a contaminated area or not must be quarantined. The ship carrying at least 100 Javanese people could only enter via Belawan, Pangkalan Brandan, Tanjung Pura, or Tanjung Balai and would be checked by the port officer who would warn the quarantine

doctor if he notices something suspicious (Broersma, 1922).

In addition to the issue of plague, many plantation communities suffer from diseases such as anemia (worm disease), chronic malaria, skin diseases, and genital diseases. To improve the health condition of the company, Deli has built three hospitals. The sufferers are usually taken to the referenced hospital (Enthoven, 1929, p. 20). The oldest hospital of Deli company was Hospital van de Deli Maatschappij in Medan City which was established in 1871 was built on the initiative of Ingermann as manager of Deli Mij and his colleague M.J. Broedners. The hospital was built through financial assistance from plantation companies under the auspices of Deli Mij. In 1871, the Deli Hospital managed Dr. H. Sandersezn and the year 1874 was replaced by A military physician, Dr. A. Feykema. According to the records of Feykema, in the year 1876 of 1,418 coolies at the Deli hospital as many as 1,124 people can be healed and 203 people died, among whom included 26 entrepreneurs. This high death from the cholera outbreak in Deli occurred twice in 1876. In 1877, Deli Hospital was enlarged (Verster, 1919).

At the beginning of its existence, the hospital only dealt with mild illnesses. In its development, hospital Deli Mij in Medan is the largest hospital belonging to Deli Maatschappij. In 1901, plus the construction of large buildings to treat patients with severe illness. The hospital contains about 600 beds. People with infectious diseases and dysentery are treated in separate buildings. The bed was a plain board. The hospital has large wards and was ventilated. The pharmacy was very good and there was a sophisticated operating room. The jamban was filled with a disinfectant tub. All waste from the hospital drain flows into the river every day. At 1915 Hospital Deli was designated as a tropical disease laboratory hospital. In 1927 Medan Hospital was enlarged and modernized for example the installation of inspection rooms equipped with modern X-ray features, which allows the maximum examination for the case of unclear diseases, treatment rooms with artificial sun and sol lux lamps, as well as the construction of a new main building. The new building started operations in 1929. Major operations were concentrated in this hospital. Medan Hospital provides an ambulance to bring serious patients from the company. Medan Hospital was a central warehouse for medicines, before being distributed through other hospitals (Enthoven, 1929). The presence of this hospital was able to re-

duce the mortality rate among coolie's plantation, as can be seen from the statistics in table 2.

Table 2. Annual Case Statistics of Deli Maatschappij Hospital In Medan, 1900 – 1911

Year	Coolies	Acceptance	The average deaths of hospitals (%)	Average deaths per 1000 coolies
1900-01	8,766	3,846	11.4	50
1901-02	8,832	3,32	7.4	27
1902-03	10,459	4,316	6.0	25
1903-04	9,94	4,812	4.4	21
1904-05	9,294	4,287	4.8	20
1905-06	9,796	4,525	2.4	11
1906-07	10,633	4,643	3.5	15
1907-08	11,009	5,734	3.0	16
1908-09	9,866	5,407	2.6	14
1909-10	9,916	4,291	1.9	9
1910-11	10,29	4,289	2.6	12

Source: Notes on Sumatra, <http://watcut.uwaterloo.ca/rural-sanitation/Sumatra.html>

Due to the continuous expansion of plantations and the increasing number of workers accompanying, it is necessary to set up a new hospital in Tanjung Selamat. The maternity facility for Javanese women was also built in this hospital which was started to be occupied on November 1, 1922. In this hospital, 250-300 children are born every year. Just like Medan hospital, this hospital also provides an ambulance to bring patients from the company. Tanjung Slamat Hospital also provides regular services between hospitals and stations for patients arriving by train (Verster, 1919; Enthoven, 1929). The Lubu Dalam Hospital and the Bangkatan in Binjai built-in 1908 were worn out and replaced by a large-scale hospital in Bangkatan which was inaugurated in August 1921. The hospital also features a complete treatment for Europeans, so sick Europeans can be treated here and do not need to be transferred to the Medan hospital. The Lubu Dalam Hospital in remained used for a while as a quarantine station for workers who had just arrived at the company in Langkat, but then stopped when the quarantine was also transferred to Bangkatan Hospital (Enthoven, 1929).

On the east coast of Sumatra, especially in Serdang, Deli, and Langkat, there are hundreds of lepers wandering around. In the case of leprosy, the danger of contamination is especially in healthy people who carry bacillus and transmit the disease unnoticed. By the end of 1900, a leper in Deli was estimated by Dr. Mulier around 200 people. The transmission in Medan occurs through the touch of lepers in the markets and bathing in rivers among the healthy population (Kol, 1903, p. 103). In 1904, there were known 443 cases (Broersma, 1922). The treatment of lepers is also a private initiative. In this case, Deli Mij also contributed to the development of the care for the leper on the island of Sicanang, near Belawan in 1910 (Verster, 1919; Volker, 1928). The hospital that was founded without the intervention of this government functioned as a leprosarium, which is the shelter and exile for people with leprosy, although sometimes also caring for the ordinary person. Sicanang Leprosy Hospital can accommodate 350 sufferers (Broersma, 1922). The cost of treatment is borne by contributions from plantation entrepreneurs, cash landscapes, Chinese people rich in Medan, and some other personal funds. At the end of 1915, there were as many as 277 patients who had been admitted to this hospital. At the end of 1916, Sicanang Leprosy had 351 people, 238 of them Chinese.

Before the leprosy hospital built on Sicanang Island, in 1884 Deli Mij had initiated to set up a lease for the contract officials who could no longer work. Deli Mij raised support from plantation entrepreneurs and other residents in Deli, as well as government support. Although the Government supported the proposed annual subsidy fund was rejected by the lower tribunal. Nevertheless, Deli Mij remained with his plans and in 1887 the Immigranten Asyl was established in Medan. The sanctuary is given to all workers without distinguishing skills and nationality, which can no longer support themselves in or outside the company, due to illness or otherwise. Primary care was given to the blind, disabled, insane, and leper. In 1889, the amount of hospitalized in this place reached 110 people and in the following years, the number continues to increase to the maximum number of 250 people. After the Sicanang Leprosy Hospital was established, in 1915 the Leprosy division in the asylum was dissolved (Verster, 1919).

In addition to hospitals, the Deli company together with the Senembah company and the tobacco company Medan also established a pathological laboratory on 3 October 1906 which was centered in Medan, with Dr. W.A. Kuenen as the first

director. This laboratory was built adjacent to the hospital Deli company. The Institute performs all the complex diagnostic work. As compensation, the pathology laboratory will serve the donor company in terms of giving technical guidance to the health field. Doctors, both from plantation companies and governments regularly submit research materials that support them in diagnosing patients, such as stool tests on dysentery pathogens, typhoid, cholera, etc. The rats captured in Belawan were regularly monitored for plague prevention. At the health center, doctors can research bacteriology, chemistry, and anatomy. Serum, vaccine, and smallpox dust were also available from this place. As an overview of the laboratory's operations, in 1927 it has conducted 8,112 bacteriological investigations, 396 anatomical research, and 9,056 Wasserman reactions, as well as for 489,300 people with smallpox have received over 60 liters of different serums and 283 different vaccines. (Verster, 1919; Volker, 1928; Modderman, 1929).

In addition to the service of hospitals and laboratories, public health was also maintained in other ways, namely through activities that provide health education. Residents were given education about home hygiene. The traveling nurse runs twice each week, examining the children, and conducting inspections at home, providing counseling for clean living and good nutrition in both parents and young people. All babies up to six months of age begin to be weighed once a week. In the case of weight loss, children were sent to the hospital for inspection. As a result of this action, children become more supervised development and sent to the hospital early in case of illness. Children with a mild illness such as wounds and skin diseases will be treated on an outpatient basis, while terminally ill children would be brought to the hospital (Enthoven, 1929; Maatschappij, 1931).

Over the last decade, the health condition was quite stable (Enthoven, 1929). The amount of pain in tobacco plantations is 2-2.5% and in rubber plantations 1-2%. Mortality rates were always below 10 per 1000, usually 6-7 per 1000 people. Data show the mortality rate decreased from 50 per 1000 to 5 to 10 per 1000 inhabitants. The decline in mortality seems to lie in the fact that infections that cause diseases such as typhoid, cholera, dysentery, and other tropical diseases such as *beri-beri* (Hongerodeem) and Anchylostomiasis (quarries) are virtually no longer causing death. Mortality rates due to pneumonia and tuberculosis were also reduced due to increased worker resistance. The number of contract workers undergoing hospital

treatment also decreased, from between 5% and 10% in 1921 to between 1% and 2% in 1931 (Maatschappij, 1931). Epidemic disease was still within a reasonable limit, thus only a small impact on the percentage of the disease and almost no effect on death.

Through several health services provided by plantation entrepreneurs, mortality rates have decreased. Both indigenous people and migrants who were not involved in plantation activities also benefit from the presence of these institutions and hospitals. Large epidemics such as pes, cholera, and smallpox can be controlled at the appropriate time so that the outbreak cannot spread and minimize the number of victims.

CLEAN WATER SUPPLY

In the development of Medan as a modern city, it takes various facilities to facilitate the lives of its people. One was the presence of clean water, which will be a problem when the population was increasing. Earlier people used water from rivers and wells. The people of Medan use water from rivers such as the Deli River, Babura River, and Kambing River. It was also from rainwater and well water. Because of the absence of pure drinking water and the proximity of Medan to the ever polluted Deli River, some cases of cholera and typhoid occur annually. Therefore, drinking water pipes have become an important necessity.

In 1898, the company G.D. Langereis & Co., based in Binjai, proposed a one-year concession to the government to provide clean water from the Deli River. The application was granted by the government of Medan through Government decree (GB) No. 16 dated 2 December 1898. Nevertheless, in the implementation of the company is experiencing financial difficulties, so on 3 February 1899 Deli Maatschappij took the initiative to manage clean water companies (Mededeelingen en Rapporten van het Department der Burgerlijke Openbare Werken, 1919, p. 2). Although the Deli company considered the development and exploitation of the main system for clean water supplies to be government duties, the company finally decided to settle the water problem using its resources. It is not detached from the interests of the Deli company, because of the results of the research by the plantation doctor are known that the main cause of high deaths in plantations is due to dysentery disease. To combat the spread of dysentery the doctor recommends the construction of a fresh drinking water supply system from the spring in Sumbul House, a small village located in the south of Medan

(Mededeelingen en Rapporten van het Department der Burgerlijke Openbare Werken, 1919; Oschendorf, 2018).

On July 26, 1904, the government issued a decree giving priority to Deli Maatschappij. After conducting research, Deli Maatschappij concluded that clean water can only be extracted from natural resources in the high altitude area of Bandar Baru located between the Farmer River and Betimus River. Subsequently, in 1905 Deli Mij was granted permission for the Clean Water management concession with a guarantee of 5,000 NLG. Waterleiding Maatschappij Ajer Berisih officially established on 8 September 1905 with supervisory directors Charles Marie Herckenrath, Hendrik Cornelis van den Honert, Pieter Kolff, and August Janssen (*Statuten En Voorwaarden van Concessie van de Naamlooze Venootschap Waterleiding Maatschappij Ajer Berisih Te Amsterdam*, 1910:5-8). Since then, concessions have moved from Deli Mij to Waterleiding Maatschappij Ajer Berisih with a concession period of 50 years. The company supplies clean water to Medan city and supplies four adjacent tobacco plantations including three owned by Deli company, namely Deli Toewa, Mariendal, and Polonia plantations. In addition, the company has the obligation to provide free water to the people including for the fire extinguisher facility of 130 m³ per day. The company donated 10 hydrants, 5 drinking water transmitters, and 3 public bathing places that became public means in the city of Medan (Oschendorf, 2018). The company was considered to be generous with free water giving to the public. But on the other hand, clean water networks are only built on areas inhabited by first-class communities and second-class communities. People live in different territories according to their class. Water utilization in Medan City is obtained the following data: Europeans 150 liters/day, Chinese people 90 liters/day, Arabs 70 liters/day, and indigenous peoples 50 liters/day (Mededeelingen en Rapporten van het Department der Burgerlijke Openbare Werken, 1919:8). From this figure, there is discrimination due to the amount of water for the indigenous least, while the number of indigenous populations is much more than other populations, especially Europeans.

EDUCATION IMPLEMENTATION

The education that took place in East Sumatra was cultivated by the colonial government, missionaries, and private companies. Nevertheless, in general, the interest of plantation companies is very lacking in education, even from those who oppose it. They

believe that if local people receive education, they would not want to work as laborers on the plantation. With the expansion of business and trade offices on the East Coast, it caused a low-worker shortage like a clerk. Elementary school Education provides an opportunity for indigenous peoples to make social progress (Bureau, 1919).

In 1908, a meeting was held between the President, the labor Inspectorate, and the members of the plantation Union as well as representative of indigenous education Inspector Van Bommel to discuss education improvement in various companies, as well as discussing the provision of teaching staff. Only a few entrepreneurs attempted to promote the education of the coolie's children. However, since the end of 1916, at the encouragement of the Governor of East Sumatera Residency which convinced plantation entrepreneurs to assume responsibility is included in the provision of basic education. Governor van der Plas advocated the creation of entrepreneurial schools in plantations that would provide some basic instruction and agricultural instruction. Entrepreneurs were aware of the need for coolie's colonization which was the need to improve the living conditions of people who work, including in the field of education. In the year 1918 for the first time, the pilot school for the plantation company was opened. On this occasion, it was also proposed that more public schools were established. The government will conduct free surveillance, and provide annual expenditure grants of all formation costs, and teacher education required. Almost all association members expressed a willingness to establish a school. In the early 1920s, regular education in plantation schools was allegedly inhibited by the use of children to collect caterpillars or work in warehouses. According to data in the year 1921, the company incorporated in the DPV has established 71 schools attended by 2,664 students. While the number of children aged 1 to 12 years was 21,611 children. At the end of December 1928, the number of schools belonging to the association had 74 schools with the number of pupils reaching 4,743 people (Modderman, 1929).

Deli Company also contributed to the improvement of education for plantation communities. At first, the Deli company opened two primary education schools in Mariendal and Paya Bakung estates. Plantation schools use Malay or Javanese as the language instruction with a curriculum similar to the *Volkschool* (village school) with a three-year education period. Until the year 1926 Deli Company had established a total of 27 schools in plantation with a student population of 1,389 people. At

the end of December 1928, the Deli company had 30 schools with total students of 1849 (Modderman, 1929). In 1930 the number of pupils increased to 2,144 people (Maatschappij, 1931). The children of plantation workers enjoyed a free education at the school, with Malay teachers and the next being replaced by Javanese teachers assuming that the teaching provided by the teachers from the same tribal area would give the best results (Enthoven, 1929). Out of a total of 74 schools opened by 8 plantation companies, then Deli Mij gave the greatest number with 30 schools, and from the full student as much as 4,743 then 1849 was a pupil of Deli Mij School (Modderman, 1929).

In addition to offering basic education, the Deli company also manages a vocational school at a plantation in Belawan for a short period. The company set up a craft school in Belawan in 1927 due to a lack of skilled craftsmen. The school was founded by sampling a craft school in Medan. This school is a timber or crafting school, where the children of workers are trained to become skilled craftsmen under the expert guidance from Java. In this craft school, children get training as interns for free and after graduating from school they are free to decide their way. Children are also allowed to receive teacher training when they have good talent (Enthoven, 1929; Modderman, 1929). Number of craft school students there are 35 boys, get an education for free with free dormitories (Maatschappij, 1931). The school was closed due to financial reasons between 1929 and 1933. In addition to schools, the company has also opened libraries. The library is used by the company's employees who are not illiterate. These libraries initially contain about a hundred books; which numbers continue to be added every year. Some popular publications include *Pandji Poestaka* and *Sri Pustaka*. Until 1928, there were 141 libraries on tobacco plantations (Volker, 1928).

CONCLUSION

East Sumatra experienced a remarkable transformation since the end of the 19th century in line with the massive entry of capital in the plantation sector into the region. Plantation entrepreneurs should start all things for the benefit of the company plantation. They have to build roads, repair rivers, build bridges, import labor, and take care of freight delivery. Meanwhile, the government's strength and influence were very limited, even the government of the Dutch East Indies did not perform at all during pioneering periods. In this case, Deli Mij has contributed much to the transfor-

mation that occurred in East Sumatra through modernization in various fields. In addition to building a transportation network that connects inland to the port, Deli Mij also built health facilities such as hospitals and pathology laboratories. In the field of education, Deli Mij also contributed by establishing schools for plantation children. Although what Deli Mij does was inseparable from its importance as a large plantation company, the local and plantation community also feels the benefit of Deli Maatschappij's contribution. The opening of transportation access has opened new economic opportunities for the community, while the presence of health facilities has reduced the mortality rate in East Sumatra. Deli Maatschappij has built many schools in plantations area that would have paved the way for social mobility.

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