

Railway Transport Development in East Sumatra, 1880s-1930s

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Abstract. This article examines the relationship between the development of the plantation industry and the construction of railway in East Sumatra in the 1880s-1930s. This article uses historical methods. This study reveals that the construction of railway lines is related to the needs of planters for modern transportation to transport plantation products. The construction of railway infrastructure was carried out by Deli Spoorweg Maatschappij (DSM), a company formed in 1881 by the manager of Deli Maatschappij, J.T. Cremer. In the period 1883-1937, the DSM built 553,223 kilometers of railroads stretching from Besitang to Rantau Prapat. This transportation can reduce the time and cost of transporting plantation products to the port.

Keywords: East Sumatra, Railway, Transportation.

1 Introduction

East Sumatra was the most productive plantation commodity-producing area in the Netherlands Indies from the late 19th century to the early 20th century. This area supplies tobacco, rubber and palm oil for the European and American markets [1]. The plantation industry requires fast and efficient transportation to transport production to the port. However, at the start of the expansion between 1864 and 1880s, transportation of production still uses oxcarts across muddy roads when it rains or through rivers in small canoes to the port for export. This condition is certainly not profitable for planters because the distribution of plantation products to the port is slow [2].

Poor road conditions prompted plantation entrepreneurs to urge the Netherlands Indies government to build transportation infrastructure in East Sumatra. However, the urging of planters was not responded positively by the Netherlands Indies government. This was the government's reaction to arrogance of the planters who were more economically and socially inclined to the Malay Peninsula. The government argued that the maintenance of roads in East Sumatra was the responsibility of the indigenous rulers, because they were the ones who held land rights in that area [1]. Finally, the development of transportation infrastructure had to be funded and carried out by the planters [3].

In 1881, the manager of Deli Maatschappij (Deli plantation company) took the initiative to build a railway line connecting the plantation area with the port. This initiative is supported by planters who are members of the Deli Planters Vereeniging (Deli planters association). In mid-1883, several high-ranking plantation companies formed Deli Spoorweg Maatschappij (DSM), a company that would handle the construction of a railway line in East Sumatra. Construction of the railway line was started by DSM in late 1883. By 1937, DSM had built a railway line that stretched from Langkat to Labuhanbatu, connecting plantation areas with ports.

This paper discusses the relationship between the development of the plantation industry and the construction of railway in East Sumatra in the 1880s-1930s. The problems focused on: (1) how does plantation development encourage the construction of railway lines? (2) How does the expansion of the railway line support the growth of the plantation industry?

2 Research Methods

The research method used is the historical method. This method consists of four stages: (1) heuristics (collection of sources), (2) source diversification, (3) interpretation, and (4) writing or historiography [4]. The historical narrative of railway development in East Sumatra is built using several variations of sources. Documents and maps recording the development of colonial railway transportation were obtained from the Leiden University Libraries digital collection website. The secondary sources in the form of books and articles become knowledge in compiling the framework of this paper.

3 Results and Discussion

3.1 Private Capital and the Development of Large Plantations

On July 6, 1863, one year after the Sultan of Deli surrendered to the Netherlands Indies government, a Dutch businessman named Jacobus Nienhuys arrived in Deli to invest in tobacco cultivation. Nienhuys' interest in investing in Deli stemmed from the news conveyed by Said Abdullah, a trader, when they met in Surabaya. Abdullah told Nienhuys that Deli is a potential tobacco-producing area. Nienhuys was so impressed that he decided to go to Deli with Abdullah. Upon arrival in Deli, Nienhuys immediately asked his company for permission – *P.v.d Arend & Consortium* – to move their activities from Java to Deli [5]. After the permit was obtained, Nienhuys provided the Karo farmers with capital to grow more tobacco than usual, then Nienhuys bought all of their produce. However, the outcome of that effort was disappointing [3].

The failure of piece rate method forced Nienhuys to open an experimental tobacco plantation on 75 hectares of rented land using hired labor. However, he found it difficult to find labor because the population of Deli – the Karonese and Malays – already had fields as an economic source and refused to become wage laborers. To solve this problem, Nienhuys brought a few Javanese hajis from Penang. However, the Nienhuys plantation produced only 50 bales of tobacco which were shipped to Rotterdam in July 1864. In Rotterdam, Nienhuys tobacco is priced at 48 cents per half kilogram [5].

In 1865, Nienhuys recruited 120 Chinese laborers from Penang. The use of Chinese laborers allowed the Nienhuys plantation to produce 186 bales of high quality tobacco. He

sold it at an astonishing price of 149 cents per half kilogram [6]. At the same time, Nienhuys signed the first concession contract with the Sultan of Deli for a land area of 2,000 bau (1 bau = 7096 m²) located in Klumpang [7]. In 1866 the Nienhuys plantation produced 159 bales of tobacco at 121 cents per half kilogram [8]. Even though, Nienhuys is still not convinced that tobacco cultivation in Deli has a future because his business has suffered losses. Then he suggested that *P.v.d. Arend & Consortium* willing to invest in the cultivation of coffee, nutmeg, and coconut. However, his suggestion was rejected. Finally Nienhuys decided to leave the consortium, then he returned to the Netherlands to seek financial support.

Nienhuys arrived in the Netherlands in August 1867. Once there, he managed to obtain capital assistance of 30,000 guilders from G.C. Clement and P.W. Janssen. In late December 1867, Nienhuys had returned to Deli. Then he obtained a land concession from the Sultan of Deli. The Nienhuys tobacco harvest in 1868 brought a profit of 37,000 guilders. In 1869, his profits reached 50,800 guilders [5]. Because the prospect of tobacco cultivation was promising, Nienhuys together with Clemen, Janssen, and the *Nederlandsche Handel Maatschappij* (NHM) founded *Deli Maatschappij* in 1869. At the time of its establishment, *Deli Maatschappij* had a capital of 300,000 guilders and a land concession of 10,000 bau, mostly planted with tobacco. In 1870, this company was able to pay a dividend of 20% from tobacco sales [9, 10].

Deli Maatschappij developed into a large company when led by J.T. Cremer. He replaced Nienhuys who returned to the Netherlands in 1871. Under Cremer's leadership from 1871 to 1883, *Deli Maatschappij* tobacco production increased from 1,788 to 21,683 bales. Its capital also increased from 300,000 to 2,000,000 guilders, with an average annual profit of 73% [3, 11].

Along with the progress of *Deli Maatschappij*, other Western entrepreneurs are competing to open tobacco plantations in Deli. They even opened tobacco plantations in the Langkat and Serdang areas since the early 1870s. When Deli tobacco entered the United States market in 1881, there were 41 large plantations in Deli, 18 in Langkat, and 8 in Serdang producing 82,356 bales of tobacco [12; 6]. Towards the late 1880s, the expansion of planters had extended to the Asahan area to Siak. The number of tobacco plantations increased sharply to reach 170 plantations in 1891.

When the number of plantations increased rapidly, the selling price of Deli tobacco declined drastically during 1890-1891. The tobacco crisis was caused by oversupply in the world market and increasing import duties in the United States [12]. This condition caused the number of plantations in East Sumatra to decrease to 135 in 1892, and tobacco production also decreased dramatically. After the crisis, the selling price of Deli tobacco was back above 100 cents per half kilogram. However, 25 tobacco companies had been dissolved during 1890-1894, most of them owned by individual entrepreneurs who did not have the financial immunity to deal with the crisis. In fact, most of the plantation land owned by individual entrepreneurs was taken over by large companies. In 1898, there were 44 large companies engaged in tobacco cultivation in East Sumatra, including *Deli Maatschappij* had a tobacco plantation area of 82,400 bau, *Senembah Maatschappij* of 47,836 bau, *Medan Tabak Maatschappij* of 21,477 bau, *Tabak Maatschappij Arendsburg* of 14,500 bau, *Deli Batavia Maatschappij* of 11,000 bau, *Amsterdam Deli Compagnie* of 10,115 bau, and *United Lankat Plantations Company* of 9,000 bau. The tobacco crisis in 1890-1891 had taught planters a lesson that the cultivation of superior quality tobacco depended on the quality of the soil and climate which was only obtained in Deli, Langkat, and Serdang. Therefore, the planters stop tobacco production on unsuitable land, then replace it with rubber and oil palm [13].

Experiments on rubber cultivation were started in 1889 by Deli Bila Maatschappij, a company owned by a Swiss businessman, who planted 9,228 rubber trees on the Pangkattan plantation, Bilah [14]. In 1902, Deli Maatschappij also owned about 5,000 rubber trees in the Batang Serangan plantation, Langkat. However, rubber planting was still an experimental project until 1905. Commercial rubber production in large quantities only began to be carried out in earnest since 1906, after experimental projects showed that the soil and climate of East Sumatra were suitable for rubber cultivation. The area of rubber plantations increased from 2,078 hectares in 1906 to 284,213 hectares in 1932. Eventually, rubber became the savior for many bankrupt tobacco plantations in the liparitic lands of East Sumatra [5].

Meanwhile, the planting of oil palm on former tobacco plantations began in the early second decade of the 20th century. The pioneers of oil palm plantations were K. Schadt, a businessman from Germany, who planted oil palm in Tanah Itam Ulu (Fifty), and a businessman from Belgium, Andrien Hallet, who cultivated oil palm in Pulau Raja (Asahan) [5]. By 1917, there were already 17 oil palm plantations covering an area of about 2,634 hectares. In 1934, the number of oil palm plantations increased to 33 with an area of 43,912 hectares.

The plantation industry in East Sumatra requires a large number of workers. Local populations rarely want to work as laborers on plantations. As a result, labor needs are met by contract coolies who come from China, India, and Java. In 1874, the planters employed 4,476 Chinese coolies, 316 Javanese coolies, and 456 Indian coolies [15]. This number continues to increase as the number of plantations increases. In 1920, there were 27,715 Chinese coolies, 209,459 Javanese coolies, and 2,010 Indian coolies [12]. For contract coolies, East Sumatra is like a “land of sweat and tears of death”, even like “hell” [16]. The coolies must bear the heavy burden of life results from bad work's conditions on the plantation. The pamphlet of *De Millioenen uit Deli* by Van den Brand, a Dutch lawyer, a dramatic way disclosed the lives of contract coolies who suffered poverty, exploitation, discrimination, and even brutal treatment from supervisors and planters [17].

Meanwhile, East Sumatra is a “goodland, land of gold, paradise” for planters [16]. The planters are seen as “a new kind of people” (een nieuw mensentype), the true embodiment of “spirit of the business world and spirit of pioneers” [18]. They are proud to call themselves Deliaan (Dutch Deli) with their distinctive characteristics: rude, drunk, lacking in customs, hate anything – especially bureaucracy – that hinders the smooth accumulation of their profits. They respected the President Director of *Deli Maatschappij* more than the Governor General of Netherlands Indies. The planters have a sense of pride in helping to open East Sumatra into a modern area [19]. This sense of pride grew because major infrastructure networks such as roads, telephone and telegraph links, and the railway network, were all financed and implemented by plantation companies [3].

3.2 Railway Network Construction

The existence of trains in East Sumatra is inseparable from the influence of the plantation industry owned by Western private investors. The development of the plantation industry since the end of the 19th century, first tobacco, then rubber and oil palm, of course requires faster transportation to transport the plantation products. In the early period of opening (1860s-1880s), plantation produce was transported by road which was muddy when it rained by using carts drawn by animals such as cows, buffaloes, and horses as means of transport or through rivers in small canoes to the port. This situation is considered unfavorable for plantation entrepreneurs due to the slow delivery of plantation products [20].

Therefore, in 1881 the initiative of J.T. Cremer, Manager of *Deli Maatschappij* (Deli plantation company), for the construction of the railway from Medan to Labuhan. On January 23, 1883, Cremer's idea was realized by the Netherlands Indies government by granting a concession to *Deli Maatschappij* to build a railway line [21]. However, in June 1883 the concession was transferred to DSM (*Deli Spoorweg Maatschappij* – Deli Railway Company) on the initiative of several Dutch businessmen, such as P.W. Janssen (Director of *Deli Maatschappij*), B. Heldring (Director of *Nederlandsche Handel Maatschappij*), and I.J. van Santen (Director of *Nederlandsche Indische Handelsbank*), by raising an investment capital of 2,440,000 guilders. The Dutch businessmen also agreed to register DSM with a notary J.E. Clausing [20].

Construction of the first railway line, from Medan to Labuhan along 16.7 kilometers, began in late 1883. This line was opened in mid 1886. Between 1887 and 1890, DSM opened the Medan–Binjai, Medan–Deli Tua, Labuhan–Belawan, Medan–Serdang, Serdang–Perbaungan and Binjai–Done, with a total track length of 86.7 kilometers [2]. In 1900, DSM started working on a railway line to Pankalan Brandan because there were oil mines in the area [22]. In addition to building rail infrastructure to the northern region (Langkat), DSM also continues to extend the railway line in the Serdang area. The length of the railway line built by DSM until 1908 reached 253 kilometers [2].



Fig. 1. Railroad Route of *Deli Spoorweg Maatschappij* in 1897.

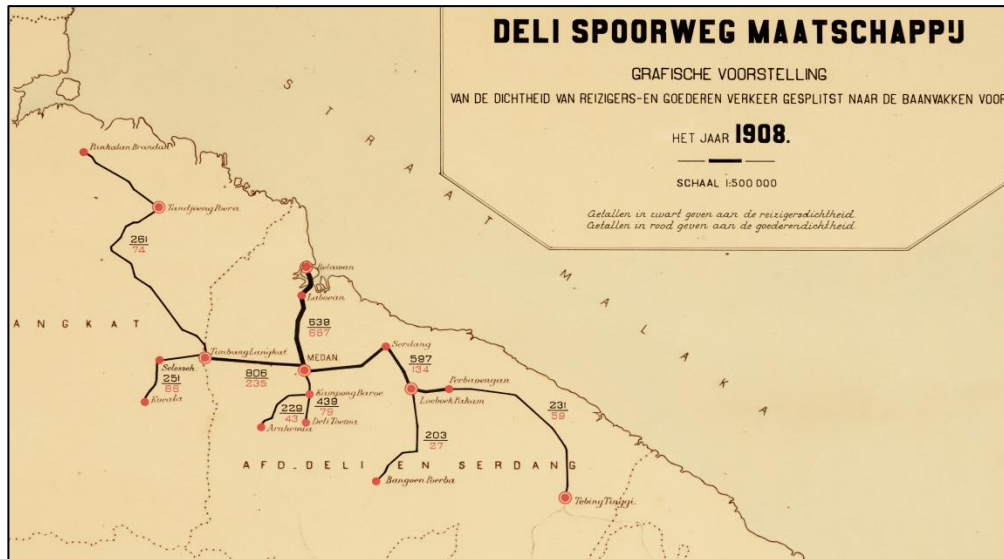


Fig. 2. Railroad Route of Deli Spoorweg Maatschappij in 1908.

In the following period, DSM obtained a concession to open branches of the route network to the northern region: Simalungun, Asahan to Labuhan Batu. Construction of a railway line to the south began in the early 1910s. In 1916, DSM completed the construction of a train to Pematang Siantar in Simalungun. In 1937, the railway line had reached Rantau Prapat in Labuhanbatu. In its development, the railroad tracks are getting longer because they are interconnected between plantations located in the east coast of East Sumatra, both to the north and south. The total railway line built by DSM until 1937 reached 553 kilometers. Along this route, DSM has built 54 stations [2]. The long list of railroad tracks in East Sumatra can be seen in the table below:

Table 1. Tracks and Length of Railways in East Sumatra in 1883-1937.

Rail Tracks	Length (meters)	Decree	Inauguration
Medan – Labuhan	16.743	No. 17, January 23, 1883	July 25, 1886
Medan – Binjai	20.888	No. 17, January 23, 1883	May 1, 1887
Medan – Deli Tua	11.249	No. 17, January 23, 1883	September 4, 1887
Labuhan – Belawan	6.162	No. 17, January 23, 1883	February 16, 1888
Medan – Serdang	20.122	No. 09, April 28, 1888	July 1, 1889
Serdang – Perbaungan	17.668	No. 09, April 28, 1888	February 7, 1890
Binjai – Selesai	10.576	No. 01, June 20, 1889	December 19, 1890
Perbaungan – Bamban	30.350	No. 02, February 12, 1900	April 11, 1902
Binjai – Stabat	24.036	No. 01, July 13, 1900	August 1, 1904
Tjg. Pura – Pkl. Brandan	19.505	No. 01, 13 Juli 1900	December 15, 1904
Stabat – Rt. Laban	22.428	No. 01, 13 Juli 1900	June 20, 1903
L. Pakam – Bgn. Purba	27.936	No. 25, 13 Juli 1900	April 10, 1904
Rt. Laban – Bamban	10.680	No. 24, September 20, 1901	March 2, 1903

Kp. Baru – Arnhemia	14.872	No. 62, June 26, 1906	October 1, 1907
Rt. Laban – Tjg. Balai	95.602	No. 14, September 19, 1912	August 6, 1915
Tjg. Balai – Tlk. Nibung	4.592	No. 14, September 19, 1912	February 1, 1918
Tbg. Tinggi – P. Siantar	48.464	No. 02, August 25, 1914	May 5, 1916
Deli Tua – Pcr. Batu	3.035	No. 28, June 10, 1915	December 1, 1915
Pkl. Brandan – Besitang	14.990	No. 56, October 26, 1917	December 29, 1919
Besitang – Pkl. Susu	9.510	No. 56, October 26, 1917	December 1, 1921
Kisaran – Mbg. Muda	57.111	No. 06, December 13, 1926	August 19, 1937
Mbg. Muda – Milano	44.199	No. 07, October 24, 1928	August 19, 1937
Milano – Rt. Prapat	12.562	No. 07, October 24, 1928	August 19, 1937
Total Rail Length	553.223		

The construction of a railroad track is quite significant in line with the expansion of plantations to several areas on East Sumatra, both in the north and south by making the city of Medan as the center point, so that the results from these plantations can be sent more quickly to the port of Belawan as a source of entry and exit of imported and exported goods [12]. The Belawan port was built by the Netherlands Indies government to serve international trade and shipping activities, replacing Labuhan Deli which was experiencing silting caused by mud deposits carried by the Deli river.



Fig. 3. Railroad Route of *Deli Spoorweg Maatschappij* in 1902.

In 1915, European personnel working for DSM reached 198 people and indigenous personnel reached 2,285 people. By 1920, the number of European personnel had increased to 250 and the indigenous to 3,704. Based on racial classification, European personnel are placed in job positions that require expertise, while indigenous personnel are in rough and unskilled job positions [23]. In 1924, trains carried 680,000 tons of 1,000 kilograms of goods over an average distance of 72.5 kilometers and 4,500,000 travelers an average distance of 22 kilometers.

With the existence of railroad tracks in East Sumatra plantations, Deli Spoorweg Maatschappij sees business diversification opportunities that can be developed, including telephone networks, housing facilities, and warehouse rentals. Communication means, such as telephones, are very likely to be done by using existing facilities, namely the railway line, thereby saving costs for the installation of telephone poles. This telephone communication facility plays a role in facilitating the flow of economic information so that the distribution of transported plantation commodities will be easier and smoother. In addition, it can assist the government in facilitating communication between afdeeling (districts) and cities in the east coast of East Sumatra [20].

4 Conclusion

The DSM railway network is a means of transportation built to support the rapidly growing plantation industry in East Sumatra from the late 19th century to the early 20th century. From plantation area, plantation commodities are transported by train to the port and then exported to European and American. Until 1937, DSM had built a 553,223 km rail network along the plantation area of the East Sumatra. The rail transportation system built by DSM has been integrated with the Belawan port, so that transportation of plantation commodities by train is more efficient and faster than by river as in previous times. Finally, the progress achieved by Deli Maatschappij and DSM can be regarded as a benchmark for the success of the plantation industry in East Sumatra. The existence of a plantation industry, the presence of private entrepreneurs, and the construction of a railway network later greatly influenced the development of the city of Medan as a new business center with all modern urban facilities that complement it.

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