

FROM RAILROAD TO HIGHWAY: SHIFTING USE OF LAND TRANSPORTATION SYSTEM IN THE NORTHERN COAST OF CENTRAL JAVA

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ABSTRACT

The development of land transportation facilities both trains and highway in the end of 19th and 20th century was closely related to the production plantation crops. Historical method was used in writing this article. Documentation was done by searching information related to road accidents. Documents would be traced in Jakarta National Archives, Jakarta National Library, Press Monument in Surakarta, Central Bureau of Statistics Central Java, several libraries in Yogyakarta. In early 20th century, trains became a main transportation system because they might transport plantation crops in large quantities before drove in the port city. However, due to the decline in plantation production, the function of trains decreased as well. During the New Order era which focused on agrarian farming system, trains' function as transportation went down and replaced by highway. In other words, highway became a primary transportation system because they were able to transport production crops (e.g. rice) from fields to our house. This shifting use was closely related to the policy issued by the government.

Keywords: land transportation, function, policy

ABSTRAK

Pengembangan fasilitas transportasi darat baik kereta api maupun jalan raya pada akhir abad ke-19 dan ke-20 terkait erat dengan produksi tanaman perkebunan. Metode historis digunakan dalam menulis artikel ini. Dokumentasi dilakukan dengan mencari informasi terkait kecelakaan di jalan. Dokumen akan dilacak di Arsip Nasional Jakarta, Perpustakaan Nasional Jakarta, Monumen Pers di Surakarta, Biro Pusat Statistik Jawa Tengah, beberapa perpustakaan di Yogyakarta. Pada awal abad ke-20, kereta api menjadi sistem transportasi utama karena mereka mengangkut tanaman perkebunan dalam jumlah besar sebelum melaju di kota pelabuhan. Namun, karena penurunan produksi perkebunan, fungsi kereta api juga menurun. Selama era Orde Baru yang berfokus pada sistem pertanian agraria, fungsi kereta api sebagai transportasi turun dan digantikan oleh jalan raya. Dengan kata lain, jalan raya menjadi sistem transportasi utama karena mereka dapat mengangkut tanaman produksi (misalnya beras) dari ladang ke rumah. Pergeseran penggunaan ini terkait erat dengan kebijakan yang dikeluarkan oleh pemerintah.

Kata kunci: transportasi darat, fungsi, kebijakan



INTRODUCTION

Transportation system in the Northern Coast of Central Java (*Pantura*) from the mid of 19th century to the early of 20th century changed rapidly marked by the emergence of railway transportation. In addition, this paper will also study the development of highway transportation in accordance with other transportation modes using railroads. Integration of the northern coast of Central Java from Rembang to Tegal was supported by proper transportation, either through highways or railways. This integration did not only include the economic sector between rural and urban areas or vice versa, but it also helped the government to supervise intensively to the lower regional bureaucracy. Together with the improvement of transportation, the regional officials were encouraged to inspect directly to the regions by work visits/ *tourne*. Thus, the regional government system was more centralized and easier to control if the problems occurred in the rural areas compared to the previous era.

Furthermore, in the economic sector, transportation also had a massive impact. Theoretically, economic activities were divided into three namely production, distribution and consumption. These three activities were interrelated. At the initial subsistence level of society, all three economic activities might be enclosed in a community and could be carried out alone. However, for more modern society, these economic activities were carried out by different social groups in different community and in the quite far space. Hence, transportation became very important which connected producers and consumers.

Land transportation system, either the highways or railroads was the tools to distribute goods, human and

services from one place to other places. In the early 20th century, the goods included agricultural and plantation crops produced in the hinterlands to the ports or vice versa. The construction of railroad which connected the areas producing sugarcane, tobacco, and coffee spread along the north coast of Java and the hinterlands in the Central Java which were integrated. The number of human transported also increased because trains were able to transport more passengers than other transportations such as bus, truck, etc.

RESEARCH METHOD

Historical method was used in writing this article. First step was to collect sources in accordance with the theme then continued by conducting source critics either internally or externally. Critics was conducted, so data used in this research were right and valid. Inappropriate and uncategorized sources were removed. In addition, subjectivity should be avoided, so the article was scientific and could be justified (Kuntowijoyo. 2004). Data were collected using several techniques. The main technique was documentation. Documentation was done by searching information related to road accidents. Documents would be traced in Jakarta National Archives, Jakarta National Library, Press Monument in Surakarta, Central Bureau of Statistics Central Java, several libraries in Yogyakarta, etc.

RESULTS AND DISCUSSION

Plantation Crops and Transportation System

Transportation (transportation routes and modes) particularly in Java between producers and consumers has changed. From classic era to 17th century, water transportation through river as the main aspect connecting one region to others. River basin in the hinterland areas the was closely connected to other port cities in the coastal areas. From these port cities, it was connected to sea basin which con-

nected them to other islands and international network (Hall, 1985:13-20). Production goods from the hinterlands (e.g. rice) were transported through the major rivers such as Bengawan Solo, Lusi, Serang, etc. to the trading cities in the northern coast of Java, namely Lasem, Juana, Semarang, Jepara, Demak, Kendal, Pekalongan, Tegal, etc. on the other hand, goods from abroad and other islands were stored in the port warehouses and then were transported to consumers in the hinterland through river (Lombard, 2000:52).

In early 19th century, transportation network in Java has changed significantly. Beside river transportation which was still existed, land transportation developed rapidly. The initial phenomenal step was conducted through building post roads (*De Grootte Post*) by Herman William Daendels in 1808-1811. Due to the construction, land transportation started to be an important alternative route connecting cities in the northern coast of Java. The fundamental and significant change was the construction of railway from the Forced Plantation era in order to transport production goods (plantation crops) from the hinterlands to the major port cities such as Semarang, Cirebon, Surabaya, Batavia, and Cilacap.

Plantation Crops in The Colonial Era

The memory of nationalists and liberalists related to the Forced Plantation is always dark. In other words, it was corresponded with oppression of Dutch colonialist to the indigenous people. Apart from the memory from the economic and transportation perspectives, the Forced Plantation had encouraged an adequate economic growth and the vast land transportation network. The economic growth was associated with the expanding varieties of export plants which benefited the Dutch colonialists (Booth, 1998:1-13).

During the Forced Plantation era, even though developed various types of industry plants, sugarcane and coffee were mainstay crops for the Dutch East Indies. Sugarcane was

planted in the lowlands together with the primary plants for Javanese namely rice. However, coffee was planted in the highlands which were located far from the society.

In order to support the agro-industry, the Dutch government provided full support through provision of lands and labors, capitals, infrastructure and marketing. Lands and labors were obtained by using force from the local heads. Capitals were provided through loans from Java Bank (*De Javasche Bank*). Infrastructure was build including horse roads, railway, ports and warehouses. In addition, for marketing purposes, the colonial government established an institution called *Nederlands Handels Matschappij* (Dutch Trading Company) (Booth, 1998:23).

Coffee and sugarcane were not always available to each residency in the Central Java. The highlands such as Kedu Residency generally produced coffee. Besides, the lowlands which had sufficient irrigation produced sugarcane. Furthermore, there were areas in Java did not follow Forced Plantation System but they also produced plantation crops, namely Kingdom of Jogja and Solo (*Vorstenlanden*) (Houben, 1994, Suhartono, 1991, Wasino, 2008), including Kedu Residency.

Areas became Central Java province nowadays were divided into several residencies. During the Forced Plantation Era, there were eight residencies namely: Tegal, Pekalongan, Semarang, Jepara Rembang, Banyumas, Bagelen, and Kedu. Apart these areas were *Vorstenlanden* (Departement van Landbouw, 1926). Sugarcane which became the raw material for sugar industry was the major plant expansion in Central Java in the Forced Plantation era. Table 2 showed a change of sugarcane expansion and its distribution development for each residency in Central Java.

According to table 1, it can be shown that the most prioritized sugarcane areas since early the Forced Plantation Era were in the western part of northern

Table 1. Sugarcane Areas in the Forced Plantation Era

Residency	Year	
	1837 (Area in bau)	1860 (Area in hectare)
Tegal	1040	2286
Pekalongan	658	1064
Semarang	973	1306
Jepara	2349	2629
Rembang	-	213
Banyumas	-	227
Bagelen	-	265
Kedu	-	45

Source: *Kultuur Verslag* 1837; Elson, 1994:86; van Schaik, 1986:49.

coast of Central Java. This can be seen from the vast area of sugarcane in Tegal, Pekalongan, Semarang, and Jepara. The hinterlands, Banyumas, Bagelen, and Kedu only covered small areas. Moreover, the eastern part of northern coast of Java had relatively small areas.

The second main crops were coffee. Coffee was planted in the highlands. Unlike sugarcane which has 18 months-cycle, coffee requires long time to harvest. Coffee prevailed in all residencies in Central Java. However, the most extensive area was in Kedu. Coffee areas in Tegal Residency were situated in the southern

part of northern slope of Gunung Slamet. Additionally, in Pekalongan Residency, coffee was planted in the southern mountainous regions, particularly those bordering Wonosobo. On the other hand, in Semarang Residency, coffee was planted in the southern part of Kendal such as Boja and Sukorejo (Suryo, 1994).

Kedu has typical unique coffee. Djuliaty Surojo argued that even though Kedu was not subjected to plant sugarcane, it had still impact on Forced Plantation. Kedu people were also required to plant coffee and indigo. Coffee was a highland plant and had been cultivated

Table 2 Comparison of Land Areas of Indigo, Tobacco, and Tea

Residency	Year (Area in bau)					
	indigo		Tobacco		Tea	
	1837	1844	1837	1844	1837	1844
Tegal	1374	-	-	90	87	232
Pekalongan	4389	4235	-	-	49	155
Semarang	-	-	-	250	36	180
Jepara	212	-	-	-	37	-
Rembang	-	-	259	1978	-	-
Banyumas	6542	6586	83	186	250	15
Bagelen	4389	4235	-	-	49	155
Kedu	-	250	200	-	-	225

Source: *Kultuur Verslag* 1837; Elson, 1994:86

Table 3. The Governmental Sugar Factory in Central Java

Residency	Year/Number				
	1870	1875	1880	1885	1890
Cirebon	10	10	10	10	10
Tegal	8	8	8	8	8
Pekalongan	3	3	3	3	3
Semarang	4	4	4	4	4
Jepara	9	9	9	9	9
Rembang	1	1	1	1	1
Banyumas	1	1	1	1	1

Source: Booth, O' Malley, 1988: 206-207; R.Z. Leirissa, dkk., 1996:71.

before Forced Plantation era. Coffee initially was planted freely (*manasuka*) in the house yard known as *paggerkoffic* or in the rural gardens (Soerojo, 2000).

In addition to these two plants, there were various important plants developed in the Forced Plantation era. These plants were indigo, tobacco and tea.

Unlike sugarcane and coffee which could be predicted the locations and their growth tendency, indigo, tobacco, and tea could not be relatively unmapped of their development. In a certain year, it was recorded well, but in the following year, there were no data available. This was due to the fact that the colonial government considered that these plants were less important than sugarcane and coffee (Elson, 1994,86). Sugar export from Java was produced by various sugar factories. Particularly in Central Java, there were many sugar factories which were provided in table 3.

Based on table 3, it can be seen that the private sugar factories (which was collaborated with the government) in Central Java were almost located in the Northern Coast of Central Java. Only one sugar factory collaborated with the government which was situated in the hinterland, namely Banyumas. It meant there was continuation in preserving previous tradition during the Forced Plantation era: The Northern Coast of Java as the location of sugarcane plantation and supported by adequate sugar factories.

From the Forced Plantation era, Liberal Colonial Politics era to Ethical Colonial Politics, the variety of plantation crops showed sustainability. In addition to sugarcane and coffee, there were other plants which enliven the plantation industry generally in Java, and particularly in Central Java namely tea, indigo and tobacco. In early 20th century, new commodity emerged, that was rubber. Table 4 shows the development of plantation areas in entire Java over a century (1840-1940).

Land Transportation System in the Northern Coast of Central Java

In line with the development of plantation industry in Java (especially Central Java), transportation revolution was required. Thus, railroad began to build. The proposed concession for building several railroads in Java. The routes were Jakarta-Surabaya-Bogor; Jakarta-Anyer; Surabaya-Ngawi; Jakarta-Semarang-Cilacap. These proposals lasted from 1850s to 1860s.

In order to realize the proposals regarding railway routes as a new alternative transportation in Java, the colonial government delegated T.J. Stieltjes to advise technical problems to the Colonial Ministry. In 1860, he conducted research to improve transportation system. He identified the probability of railway routes from Semarang to other hinterlands that was Semarang – Surakarta and Yogyakarta Kingdom (*Koloniaal Verslag*, 1861,117; Houben, 1994:288-289). He called it as the western and eastern mountain route, even

Table 4. Plantation Areas in Java (ha)

Year	Sugarcane	Coffee	Tea	Rubber	Indigo	Tobacco
1840	22.701		1.868			808
1850	29.204		1.643			1.241
1860	27.976		1.820			1.248
1870	32.347		3.082			Ttd
1880	37.483		5.776			76.553
1890	44.020		7.747			73.048
1900	91.049		Ttd			93.768
1910	126.525	51.231	49.439	63.943		151.533
1920	153.366	105.886	78.247	157.299		129.302
1930	198.007	97.520	98.589	228.933		182.169
1940	90.765	83.081	104.967	240.956		173.037

Source: Anne Booth (ed.), 1988, *Sejarah Ekonomi Indonesia*:221

though in reality, both passed through the eastern complex of Merbabu-Merapi (Suryo, 1994:108).

In 1861, the construction of railway was assigned by W Poolman, the former director of *NHM* to the Dutch Colonial Government. After that, Semarang to Surakarta railway started to build and succeeded officially opened on February 1870. During the first year, 70.000 tons of goods were transported to the railway (Suryo, 1994:289). Until 1880, the reports submitted by Surakarta Resident mentioned that railway exploitation ran routinely and regularly. Transported goods from Surakarta to Semarang or vice versa increased rapidly (AVS year 1872-1880).

Surakarta-Semarang railway route was continued to Surakarta-Surabaya through Madiun. Measuring new route had been started in 1876 and finished in 1880 (AVS,1880). However, the official opening these routes was in 24 May 1884 (Wasino, 2008:262).

Surakarta-Yogyakarta route was finished in 1873. The route passed irrigation fields and densely populated villages. Additionally, it also passed 56,7 Km ravines (Henket, 1886). The impact of building railways which connected Semarang-

Surakarta and Yogyakarta had carried out outstanding change to the economic growth in Surakarta. Takashi Siraishi mentioned it as capitalism century in the area (Siraishi, 1990). Suhartono identified the positive and negative impacts. From the positive aspect, the central industry plantation started to develop, however, it was also created marginal indigenous people which caused social pathology such as robbery. Social protest was in line with the development of industry plantation in these areas (Suhartono, 1986 in Sartono Kartodirdjo (ed), 24-29 July 1983). Unlike the route, other railway routes were built during the same period. Until early 20th century, almost all areas in Central Java had been tied by railway transportation. These railway routes were introduced by northern and southern route. The northern route was from Surabaya-Semarang-Cirebon. On the other hand, the southern route was Surabaya-Solo-Yogyakarta-Cirebon. In addition, there was also Yogya-Cilacap cross.

According Susanto Zuhdi (2002), Yogya-Cilacap route was the second one in Central Java after *NISM*. 187,283 km rail started to build in 1879 and finished in 1887 at a cost of 14.709.074,75 gulden.

Table 5 Passenger Transport by Railway Company from Semarang

Year	Company Name /Number of Passengers		
	NIS	SJS	SCS
1910	148785	351014	-
1915	262023	603810	241343
1918	487299	824855	307615
1925	281438	763472	157399
1929	381065	801092	275412

Source: *Verslag de Handels Vereeniging te Semarang*: 1910,1915,1918,1925,1929.

The purpose of building Yogya-Cilacap railway was to facilitate sugar transportation from factories in *Vorstenlanden* areas, especially Yogyakarta. Sartono Kartodirdjo (1987: 363-366.) stated that railway was built in order to connect between port cities and the hinterlands, the major port city in Central Java was Semarang. Moreover, small port cities such as Tegal, Pekalongan and western part of Cirebon in the northern coast and Cilacap in the southern coast.

The development of plantation industry in Central Java since Forced Plantation era to Ethical Colonial Politics had created transportation networks. These networks connected the raw material producers of plantation products and the manufacturing industries. From the manufacturing factory, the plantation crops then were distributed to distributors broadly through the available routes. If they were exported abroad or outside Java, the final network from the land transportation in Central Java was ports, especially Semarang port located in the north and Cilacap in the south. However, if they were marketed in domestic market, roads were used (highway and village roads).

Land transportation network through railways developed rapidly and *network* to Semarang port was established. Until the early 20th century, there were several railway companies which opened routes across Central Java areas. The establishment of NIS (*Nederlandsch-Indische Spoorweg Maatschappij*) in Semarang in

1867 allowed transportation network from hinterlands to Semarang port. The construction of Semarang-Solo, Solo Yogya, Semarang-Cirebon, Semarang Temanggung and Yogyakarta railway routes had bounded the producers of plantation crops in the surrounding to send goods through Semarang port. NIS had transportation networks connected Semarang (including to ports) to Surakarta, Yogyakarta, Magelang (Kedu region, including Temanggung), continued to Benteng Willem in Ambarawa. Another railway company was SJS (*Semarang-Joana Stroomtram Maatschappij*). This company initially was a city tram connected between cities in Semarang, and its central was in Jurnatan. However, since 1887, this was expanded out of city based on their names into Juana, Pati Residency. This expansion through Demak, Mayong, Juana, and finally Blora. This east route allowed to transport plantation crops from Demak, Kudus, Jepara, Pati, and Rembang. To the west route, tram was built by SCS company (*Semarang-Chirebon Stroomtram Maatschappij*). This route allowed the transportation of plantation products and people from the Northern coast in the western part to Semarang part which initially passed Tegal and Cirebon ports.

In addition to transport goods, trains were used to transport people. Passenger transports were divided into three classes, namely class 1, 2 and 3. Either NIS, SJS, or SCS, all of them transported

people. Illustration of passenger transport can be seen in table 5.

Table 5 showed an interesting illustration. If transporting goods, NIS was widespread, so SJS transported most people. Regarding the operation route, NIS and SCS had longer route than SJS. This was related to the location by SJS which passed city routes, especially in Semarang. Unlike three railway companies, there was another company operated in the southern part of Central Java. This company was called SDS (*Serayudal Stoommatschappij*) and was established in 1884. The tram connected Banyumas hinterland which was had fertile soil along Serayu river to Cilacap port. The emergence of tram was important economically. This tram route as a strategy by Dutch Colonial government brake the plantation goods flow (especially tobacco in Northern Bagelen and Wonosobo), so not all goods were sent to Semarang port which previously passed Dieng mountain.

Before 1860, transportation system connected plantations, factories and ports using land transportation. The biggest highway in Central Java which became the main highway in the northern coast was built since H.W. Dendels regime named *Groote Postweg* (Nas and Prawito, 2005). This highway was the first protocol highway then it was connected with smaller roads which connected the Northern Coast of Central Java and the hinterlands. That was why the most crowded area in Central Java was in the Northern Coast one. Beside for being the main artery of land transportation, Daendels highway also connected the distribution of plantation crops from the hinterlands to the ports. The largest port was Semarang port at that time (Sulistiyono, 2003).

Smaller highways connected Solo to Semarang. Sala-Semarang highways had been existed before 1860. The highway had been used to transport plantation crops belonging to the land tenants in Surakarta such as coffee, sugarcane, and indigo. Additionally, this highway is important because of being connectors to water transportation in Semarang port.

Another highway route was Surakarta – Ngawi - Surabaya. This second route was also prominent since there was a big port connecting plantation crops outside Java and outside Dutch East Indies.

The construction of railways which connected the plantation producers (sugarcane, coffee, indigo) in the hinterlands to the port city located in the Northern Coast of Central Java in the end of 19th century and early 20th century carried out great impact in the history of transportation. Transportation system using trains was cheaper because they might transport many commodities compared with using highways, so the coast could be reduced (Suryo, 1989). Semarang became the only port in Central Java which succeeded in distributing plantation crops to Europe and being a terminal for goods from coastal areas of Central Java, either in western and eastern part or *vortenlanden* areas. For the western part of hinterlands (Serayu valley), the agricultural crops were transported through Cilacap port. The center of plantation areas was facilitated with tram routes, for instance Tegal-Balapulang, Semarang-Joana, Gundi, Purwodadi, Yogya and Sala (Suhartono, 1976).

The Dutch Colonial Government's policy regarding railway transportation changed *mainstraim* trends about land transportation which was previously used highway then shifted to trains for long-distance travel (Jellema, 1929). Trains became the main transportation for people to do their daily activities since 20th century. Due to its big impact, historiography of Java economy was always corresponded to railway transportation which was used to transport goods and human during that period.

If the dominance of railways in Java was as human and goods transportation for long-distance travel, highways, including in the Northern Coast of Java were still used even though they were not the main routes anymore. Furnivall (2009) recorded that since 1900s, the highways in Java were very good because many Europeans used them for their activities.

Table 6 The Length of Highways in Java and Madura during Dutch Government Regime

Highway Category	Year (length KM)		
	1892	1931	1938
1 st Class Highway	3.302	6.000	Ttd
2 nd Class Highway	6.017	9.150	Ttd
3 rd Class Highway	10.536	4.300	Ttd
Paved roads	ttd	ttd	8.340
Tempered roads	17.565	ttd	14.257
Untempered roads	2.890	ttd	4.083

Source: Gerret J. Knaap, 1989, *Changing Economy in Indonesia Vol. 9, Transport 1819-1940*. The Hague: Royal Tropical Institute Amsterdam.

Table 6 shows that the function of highways in the third decades of 20th century started to increase. The first class highway was increasingly built, so its length was doubled in 1930s compared with the condition in the end of 19th century. There were more paved and tempered roads, so the traffic through highways was easier.

The strengthening of highway function, especially *Groote Postweg* was supported by the emergence of cars and other motor vehicles. They demanded road improvements, especially the highways in the Northern Coast of Java. Since 1907, services for motor vehicles existed, but the private cars were widely used after World War I. In 1922, it was recorded that there

were 1.502 cars imported to Java. The use of cars for sugar factories also increased automobile import ahead of economic depression in 1930s and achieved approximately 10.000 units. (Furnivall and Rapport *En Voorstellen van de Commissie, 1928*)

The development of land transportation by the emergence of many automobile vehicles and motor vehicles in Java encouraged the government policy change towards highways. Together with the welfare policy, the colonial government responded it by improving roads and bridges using the public work budgets (Maddison and Prince [ed], 1989: 209-211)

Thus, the government also created regulations regarding the highways includ-

Table 7 The Growth of Land Transportation di Indonesia, 1969, 1980, dan 1992

Transportation Route	unit	1969	1980	1992	Annual Growth (%)		
					1969-80	1980-92	1969-92
Highway							
Bus	000	20	86	542	14,2	16,6	15,4
Truck	000	96	478	1.405	15,7	9,4	12,4
Passenger Car	000	212	639	1.729	10,6	8,6	9,6
Motorcycle	000	328	3.881	6.414	25,2	4,7	14,5
Trains							
Passenger	000	55,4	40,7	68,7	-2,8	4,5	0,9
Goods	000 ton	4,0	4,3	14,9	0,7	10,9	5,9

Source: Hal Hill, 1996, *Transformasi Ekonomi Indonesia Sejak 1966, Sebuah Studi Kritis dan Komprehensif* (terjemahan), Yogyakarta: Tiara Wacana, hlm. 262

ing the road building criteria, tax collection for motor vehicles and traffic regulations.

Although the highway strengthened since 1920s, it could not replace the function of as the main transportation for goods and human. Trains although their lines suffered a lot of damages during the Independence still became the primary element in massive land transportation and lasted in 1960s (Hill, 1996: 259). Since the New Order era under Suharto regime, there was a huge change regarding to land transportation system. Railway routes which were previously became the main route of land transportation were changed their position by the highways.

According to table 7, for 25 years of the New Order era, there were a change of land transportation. In early period of the New Order era, trains were existed to compete with the road transportation. However, their domination as the main transportation route was replaced by the road transportation. Since 1969-1992, trains as the passenger transportation only grew 0,9 %, and goods transportation was 5,9%. Their condition was highly different from the growth of road transportation in the same period, namely bus increased to 15,4 %, truck: 12,4%, passenger car: 9,6%, and motorcycle: 14,5%.

The big change of land transportation began in the *booming* era of oils between 1974-1981 (Wie in Dick, 2002), therefore, it affected in an increase of income per capita and the consumption of motor vehicles. This situation encouraged highways to be the important route to transport goods, human and services. The long-distance transportation which was initially through railways had a rival, even was replaced by the road transportation because it might transport consumers from door to door.

CONCLUSION

The development of land transportation, either railways and highways in the end of 19th century and 20th century was closely related to the production of plantation crops and agricultural crops. The transpor-

tation was used to transport plantation crops including sugarcane, coffee, and agricultural crops to the cities. This distribution could be goods and human or other services. Thus, these shifting function of was closely related to the government policy. In early 20th century, railway transportation became the main transportation because it was able to transport the plantation crops before the port cities in very large quantities. However, because of the decreasing number of plantation production, the railway function declined. Due to the fact that the New Order era focused on agrarian farming system, the railway's function declined and replaced by highways. In this era, highways became the main transportation since they were able to transport rice production from fields to home.

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