

## **The Development of the Transport Network in West Sumatra from Pre-Colonial Times to the Present**

### **Abstract**

The long-term development of the transport system in West Sumatra is surveyed, distinguishing between the phase from non-mechanized to steam-powered transport, the period of road transport (1892–1942), the partial breakdown of the transport network between 1942 and 1965, and finally its rehabilitation and further expansion. The transport system as it evolved was influenced by the spatial distribution of people and economic resources. Coastal trade, eastward land and river transport dominated the early period, whereas the railway and harbour gave a major impetus in the late colonial period. After the pre-1965 interlude of deterioration, road transport has expanded considerably. Integration of West Sumatra into the national transport system was not a foregone conclusion and sometimes the elite in West Sumatra tried to obstruct the setting-up of transport routes to East Sumatra.

### **1. Introduction**

Transport networks form an important element of national and international integration and are an interesting topic of research (Lindblad, 1993: 15–16). The development of an infrastructure is a prerequisite for economic integration, political centralization, migration, cultural diffusion, and, in the pre-telecommunications era, the flow of information. So far, studies of transportation in Indonesia have focused mainly on the quantitative growth of transportation (in terms of length of roads, numbers of passengers, tonnage of ships and so forth), national policies, and the extension of networks of one particular mode of transport (e.g. A Campo, 1992; Drake, 1989; Knaap, 1989; Leinbach & Chia, 1989; Weisfelt, 1972).

In this volume Howard Dick presents us with a more integrated approach arguing that a national economy, as exemplified by the transport network, only gradually emerged after European states imposed new political boundaries upon Southeast Asia. Dutch colonial policy was aimed at directing the trade of Sumatra away from Singapore to Batavia, a policy which has been continued since Independence. Nevertheless, Sumatra, the east coast more than the west

coast, has always remained tied to Singapore, and at no time was this more obvious than in the first decades after Independence.

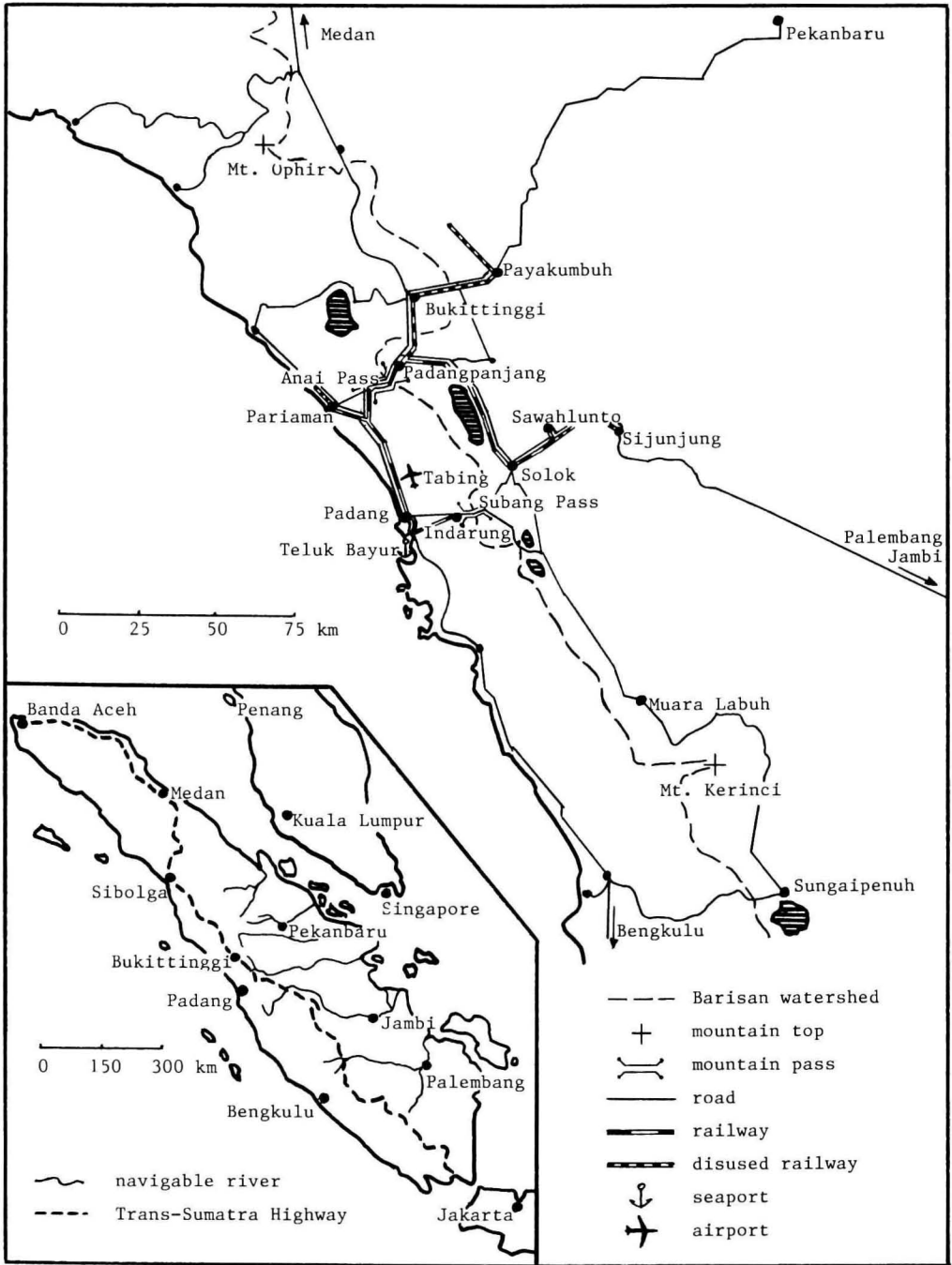
This article is, in a way, an elaboration of Dick's argument focusing on one particular province, West Sumatra. My aim is not to give quantitative data about the volume of goods and passengers transported, but to focus on the interest groups with a stake in the development of transport. Historians tend to take a teleological view, so that all past events seem to lead to growing integration. One remarkable outcome of an actor-oriented approach is, however, that integration is not a foregone conclusion. Sometimes the economic and administrative elite in West Sumatra tried to obstruct the establishment of new transportation routes. Lack of space prevents me from analysing the motives of those groups who are not so much interested in the transport as such, but who have a stake in the construction process through the provision of loans or technical expertise. They are important, for they can influence the development of transport networks by pushing through useless infrastructural constructions or obstructing much needed works.

## 2. West Sumatra

Sumatra is divided from the northwest to the southeast tip by the Barisan mountain range into what is conveniently called, the west and the east coast (see map). The Barisan Range runs close to the west coast. To the west steep hills run down to the Indian Ocean, and to the east the slopes descend gently to the Straits of Malacca. The province (*propinsi*, formerly *residentie*) of West Sumatra is made up of a narrow coastal plain and the Padang Highlands, which lie in the middle of the Barisan Range.

The spatial distribution of people and economic resources within the province influences the demand for transportation. The Padang Highlands are the original homeland of the Minangkabau people, who descended to settle the west coast well before the arrival of Europeans. For centuries the valleys of the highlands, which shelter several towns, have been among the most densely populated areas of Sumatra. The principal city, however, is the harbour town of Padang, giving the province of West Sumatra a polycentric urban system with Padang as an eccentric main point (Wolfram-Seifert, 1992: 292). Although the West Sumatran cities existed as small settlements before the colonial period, they took on urban properties with the arrival of the Dutch. Near Padang the Barisan Range is intersected by two passes: the Anai Pass (altitude: 750 m) and the Subang Pass (altitude: 1100 m).

The main economic function of West Sumatra in the Indonesian and global context has been as an exporter of cash crops: principally pepper in the seventeenth and eighteenth centuries, coffee in the nineteenth century, copra in the early twentieth century, rubber since the 1930s, but including many other crops as well. Coal has been exported from the Umbilin mine since 1892. The only major industry is the cement factory, founded in 1910. Most cash crops are



Map. *The transport network of West Sumatra in 1990*

grown by smallholders in the highlands. The Umbilin mine is located near Sawahlunto, east of the Barisan Range. The cement plant is at Indarung, in the coastal plain at the foot of the Barisan, where all materials for cement production happen to be found in conjunction with each other (Colombijn, 1994).

### 3. From non-mechanized transport to steam power, the period up to 1892

In the sixteenth and seventeenth centuries there was a whole string of ports along the west coast of Sumatra. Pepper from the immediate hinterland was collected in these ports. From the highlands small quantities of valuable goods (gold and resins) were carried to the ports on the backs of porters. The only roads leading into the interior were narrow footpaths, since the gradient of the rivers was too steep to sail far upstream. The tracks partly followed the riverbeds, because these were often almost dry and free from undergrowth. A trip from the highlands to the coast took 10–12 days (De Stuers, 1849–1850: II, 148). Transport through the longitudinal valleys of the Barisan Range was much easier than the crossing to the coast. From the ports the export products were shipped overseas by Indians, Acehnese, and other foreigners. There was also considerable coastal trade.

In 1666 the Dutch East India Company (Vereenigde Oost-Indische Compagnie; VOC) made Padang, until then an insignificant place, its headquarters on Sumatra's west coast. Padang rapidly left the other ports behind, due to the extra business attracted by the VOC and the fact that the Dutch curbed Padang's rivals on the west coast. Nonetheless, the VOC policy of promoting Padang by destroying the trade in other West Sumatran ports was counterproductive, as Padang had been linked to the other towns in one trading network. This early example of the breaking of a transport link was probably not intended as such, but was instead an unforeseen by-product of the VOC attempt to make Padang the principal harbour. The Minangkabau traders in the highlands, discouraged by the Dutch duties on the west coast, increasingly preferred to carry their goods to the east coast. This route led via footpaths as far as was necessary and then continued further down the navigable rivers. The eastern connection was strengthened by the opening of Penang in 1786 (Dobbin, 1983: 176, 209–219; Oki, 1986; Raffles, 1830: 343–346).

After the British Interregnum in West Sumatra (1795–1819) during the Napoleonic Wars, the Dutch subjugated the Padang Highlands in, what they call, the Padri War (1821–1837). This colonial war turned Padang into more than a tiny Dutch enclave on the coast, and town and hinterland were reunited under the same government. Governor-General Johannes van den Bosch, who visited West Sumatra in 1833, gave the territorial expansion an economic objective. One aim, in his view, was to build a string of fortresses on the eastern side of the highlands to control the river trade to the east and to redirect the trade to the west coast. To facilitate trade to Padang, and troop movements to the highlands, Van den Bosch had a new road suitable for ox-carts (*pedati*) con-

structed through the Anai Pass. This road was completed in 1841 and decisively influenced the transport network in West Sumatra. Although trade (the Dutch called it: “smuggling”) to the east coast was not eradicated, the highlands did indeed look to the west from then on. Transport through the Anai Pass was increased by the forced cultivation of coffee (between 1847 and 1908). The western link was also stimulated by the opening of a direct steamer line between Padang and Batavia in 1850 (Colombijn, 1994: 44–46).

Van den Bosch’s policy of curbing the river trade was the first instance in which a link in the transport network of West Sumatra was deliberately cut. This move not only disrupted the integration of Central Sumatra, but at the same time conversely formed part of the general policy to knit the archipelago to Batavia, instead of to Singapore. The Dutch colonial policy turned the Minangkabau world inside out. Before the Padri War the highlands formed the homeland (*darek*) of the Minangkabau and the coast was just part of their migration field (*rantau*). In the course of the nineteenth century Padang in the *rantau* became the undisputed centre where transport links converged.

In 1868 a large coalfield was discovered along the Umbilin river, east of the watershed in the Barisan Range. The discovery provided fuel for a debate lasting two decades about the best route by which to transport the coal. Behind this debate was the question of who would be granted the concession to exploit the coalfield and the railway required. Most debaters who proposed a route were in fact defending their application for the concession. Resident Pruijs van der Hoeven of Palembang was one of the advocates of transport, via the rivers, to the east coast; he was not an applicant, but wanted to defend the interests of his *residentie*. The Dutch government in The Hague, after consultation with the Governor-General in Batavia, rejected all successive private applications. In 1887 the Dutch parliament finally decided that the state, not a concessionaire, would construct a railway from Sawahlunto via the Anai Pass to Padang. Later it was decided that the state would not only build, but would also exploit the mine and railways.

From the start of the debate it was realized that a new transport system could also open up the Padang Highlands for faster troop movements, and transportation for the produce of smallholders and the anticipated Western plantations. Naturally, it was this side issue in the discussion that was of most interest to the Dutch inhabitants of West Sumatra. The Chamber of Commerce of West Sumatra did not care about who built the railway or by which mountain pass, as long as the link between Padang and the highlands was established quickly, but this body was too far away from the locus of decision-making in The Hague to have any influence. In 1883 the frustrated Chamber of Commerce sent a scornful petition to the Governor-General urging him to reach a quick decision. It is significant that it barely mentioned the economic and strategic relevance of the coal for the archipelago, but stressed the agricultural potential of the highlands (Colombijn, 1992).

This decision to construct the railway, which was thus taken over the heads of the West Sumatran inhabitants, revolutionized the transport system. The

railway involved the construction of a new harbour at Teluk Bayur, a bay five kilometres south of Padang, where ships could berth at the wharves and no longer needed to anchor in the roads. The harbour and trunk line of the rail track went into operation in 1892. The trunk line served the state coalmine, but also passed through Solok and Padangpanjang. Branch lines were constructed to the other main Minangkabau population centres: Bukittinggi and Payakumbuh (completed in 1896) and Pariaman (completed in 1908), with tramways extending to more outlying areas. The line to Pariaman was built primarily for copra transport to Padang. The total length of railway track was extended to 284 kilometres. The railway proved a great stimulus to the flow of travellers and goods between Padang and population centres in the highlands (Reitsma, 1943).

We know little about what the Minangkabau thought of the changes in the transport system. The smuggling along the eastern rivers shows that they were against the cutting of the riverine transport by Van den Bosch. In 1906 nearly 300 religious, secular, and commercial Minangkabau leaders sent a petition to the Dutch parliament in The Hague requesting that funds for the branch railway to Pariaman be withheld. The request was in vain, but the argument was sound: the railway would throw hundreds of ox-cart drivers, coastal shippers and related workers out of their jobs (Verslag, 1906: 21, 22 November). The argument proved unfounded in the case of ox-carts which continued to play a role as feeders for the railway stations, until they were later driven out by cars. During the Depression of the 1930s when motorized transport became more expensive, the ox-carts enjoyed a brief revival.

#### **4. The rise of road transport, 1892–1942**

Throughout the late-colonial period discussions about the railway network continued. Three possible directions for extensions were suggested: a second route from the coalfield through the Subang Pass to Padang; a rail-river connection between the coalfield and the east coast; and a connection between the West Sumatran network with the South and North Sumatran networks. These discussions were mainly fuelled by ambitious engineers, and had no effect (Reitsma, 1943).

The state harbour, which was called Emmahaven in colonial times, was exploited as a business. The harbour was run by a manager and an advisory board (*commissie van bijstand*) with representatives from the Chamber of Commerce, municipal council, European import-export firms, coal and railway company, and the shipping lines. The harbour was expected to pay its way. Harbour charges easily covered the running expenses, but were insufficient to pay for the upgrading of the harbour and the extension of the wharves. The regular deficit on the yearly account was, however, largely a matter of shifting state funds and thus subject to political decisions. For example, the harbour had to pay redemptions plus interest to its creditor, the government in Batavia, and was obliged to charge a low tariff for its services to the state-owned railway company that transported coal. Emmahaven was primarily a port for the shipment of coal and



cement, but it was also the port for the cash crops from West Sumatra and the port of transshipment to and from smaller coastal harbours. The harbours of Sibolga and Bengkulu were administratively subordinate to Emmahaven (Treatise, 1942; Kamer van Koophandel, various years).

The railway and harbour provided a big impetus to the economy of West Sumatra. Nevertheless, the region gradually fell behind its competitors on the east coast of Sumatra. The success of the east coast was due to its wider hinterland, the direct access to the international shipping lane through the Straits of Malacca, and the easy riverine transport (Colombijn, 1994: 89). Not open to rational argument the Dutch members of the Chamber of Commerce in West Sumatra refused to accept that Padang was on the 'wrong' side of the Barisan and attributed the relative decline to the fact that in West Sumatra the cash crops were produced by Minangkabau smallholders and not by Western enterprise. The Deli plain with its large plantation companies was their ideal. The languishing state of the few existing estates on the west coast and the reserve shown by potential investors were attributed to the difficulties in transporting the product. Therefore, the Chamber pleaded for the extension of the rail tracks to isolated areas where there was waste land available in order to attract new investors (Kamer van Koophandel, 1910: 19; 1921: 18–19).

The Chamber of Commerce exulted when both the Koloniale Bank (in 1925) and the Handels Vereeniging Amsterdam (in 1926) decided to start extensive coffee and tea plantations in West Sumatra. This example was a breakthrough and attracted more investors. The estates were established in three isolated regions: Kerinci, Muara Labuh, and Ophir. The new estates made the improvement of transportation even more urgent, but by then the development of the road network seemed a better option than railways.

The road network, as I mentioned earlier, was started with the construction of a road accessible for ox-carts through the Anai Pass, completed in 1841. Later a road was constructed through the Subang pass and more roads were gradually built to connect the population centres in the highlands with each other. These first roads were designed by civil servants and were often rather tortuous, following the isohypes too strictly, or were excessively steep with gradients of 1:7 elevation. The rise of the motor-car, the first car, a Benz, was imported into Sumatra in 1902, gave the impetus for the upgrading and extension of the road network. Later roads were better designed. They were usually five metres wide, with a three metre deep metalled surface (Treatise, 1942).

The growth of the road network involved the political decision about which roads should be laid out first. Two road schemes were drawn up, one for Sumatra, the other especially for West Sumatra.

The first scheme for the whole of Sumatra was put forward by the national government in 1914 (Burgerlijke Openbare Werken, 1917: 54–53; Swart, 1929). Many roads had then already been under construction for several years. The Sumatran road scheme had administrative, police, postal, economic, social, and political objectives. In West Sumatra, the scheme planned to connect Padang to other towns in Sumatra. The first road ran north from Padang via the Anai

Pass, Bukittinggi (Fort de Kock), and Sibolga to Medan. At first to make this trip was a real adventure and cars raced to break the record. By the 1920s the connection was so well established that Medan-Padang became a common trip for tourist groups. The second road led east from Bukittinggi via Payakumbuh to Pekanbaru in Riau; this road was started in 1912 and completed in 1929. The third road (called Midden Sumatraweg) also ran east from Padang via the Subang Pass to Jambi. In 1923 work on this road was discontinued when its economic necessity was questioned and the funds budgeted for it had been used up. The fourth road led south from Padang to Bengkulu; its completion was suspended by the retrenchment policy implemented during the Depression of the 1930s. By connecting the bits and pieces of existing networks, a road that traversed the whole of Sumatra longitudinally was finally made. There was very little transportation of goods on this longitudinal road.

In 1928 the Chamber of Commerce suggested a scheme for a West Sumatran road network that was in fact largely carried out later. (Kamer van Koophandel, 1928: 60, 66–79). In contrast to the road scheme for the whole of Sumatra, these roads were built for strictly economic reasons; they were designed to open up the areas with new plantations: Muara Labuh, Kerinci, and Ophir. Throughout colonial Indonesia it is observable that roads were made to isolated European estates whereas railways served population centres (Van Doorn, 1994: 186–187). Muara Labuh was reached via the Midden Sumatraweg. For Kerinci a road (called *Korintji-weg*) was made to the coast, from where export products were shipped to Padang; this road touched on the road to Bengkulu. For Ophir no satisfactory solution, either by an overland detour to Padang or by a short road to a small harbour and then by sea to Padang, was ever obtained.

Although Minangkabau had to build and maintain these roads by means of statute labour, the roads did not serve the Minangkabau population centres. Statute labour was often bought off (the so-called *rodigelden*). There were also convict labourers. Many Minangkabau cultivators settled along the roads, so that they would have no difficulty transporting their produce, and they, reportedly, even asked the administration for more roads or built feeder roads on their own initiative (Wilmink, 1931). The demand for transportation may have been increased by the well-known Minangkabau custom of migration (*merantau*).

The Depression retarded road construction and necessitated the selection of clear priorities. These were the roads to Medan and Pekanbaru, and the roads to Muara Labuh and Kerinci (Kamer van Koophandel, 1931: 79–80). Throughout the colonial period there was also an on-going effort to maintain and upgrade the roads. Maintenance was necessary to repair damage caused by heavy traffic and landslides (after downpours). Upgrading involved widening roads, straightening roads which were too winding, replacing ferries and wooden bridges by iron and concrete bridges, and asphaltting roads.

The Dutch firms in Padang were not best pleased with the road to Pekanbaru, because they feared that the trade to and from the highlands would shift from Padang to Pekanbaru. In 1926 it was reported that the Resident of West



Sumatra, W.A.C. Whitlau, had deliberately held up the road construction (Sumatra Bode: 25 August 1926). In his *Memorie van Overgave*, Whitlau denied any malicious intentions, but he showed that he was not worried by the slow construction process (due to high loans) and advised against the replacement of one particular ferry by a bridge, which would have shortened travelling time considerably.<sup>1</sup> The Dutch firms also objected to the construction of a railway from Muara Labuh to Pekanbaru. The Dutch in Padang correctly assessed the situation. Trade between the highlands and Pekanbaru increased, to the benefit of the Minangkabau. From 1931 onwards, within two years of the completion of the road to Pekanbaru, the Chamber of Commerce felt obliged to report the import and export figures of Pekanbaru. Alongside the officially registered trade, the considerable contraband between the Straits settlement and Sumatra's east coast and then up the rivers continued unabated (the wide deltas of the rivers proved unpatrollable) (Kamer van Koophandel, 1927: 6; 1931: 13).<sup>2</sup>

The competition with the east coast was also felt in the field of aviation. The citizens of Padang had with great enthusiasm started preparations for an airfield at Tabing (north of Padang), but had to be helped technically and financially to overcome the unexpected obstacle of peat soil by the national government. The Chamber of Commerce and the regional administration lobbied in vain to divert the KNILM airline Batavia-Medan to Padang. An airfield finally materialized on the eve of the Pacific War, but no regular flights were started (Kamer van Koophandel, 1930: 74–75).<sup>3</sup>

More serious than second place in the aviation stakes was that West Sumatra again lost out in the competition with the east coast in the field of shipping. Since the end of the nineteenth century, exporters in Padang had complained that the ships bound for Europe left insufficient cargo space in their holds. In 1903 the shipping company Nederland diverted its Europe-Indonesia route from Emmahaven to Sabang, and in 1923 the Rotterdamsche Lloyd shifted its route from Emmahaven to Belawan. Shipping to the United States usually went via Batavia. In the Depression years, two direct lines from Japan to Padang were established, but more for import than for export (Colombijn, 1994: 89–91).

To conclude this section, I wish to underline the importance of coastal navigation for the regional transport network. Coasters (steamships, motor vessels, and sailing *prahu*) connected Padang with other places along the west coast, down to Bengkulu in the south and up to Sibolga in the north, and with the small islands off the Sumatran coast. Coastal navigation was used for distributing consumer goods, collecting cash crops such as copra from the coast or coffee and tea from Kerinci and Ophir, and taking coal and cement to other parts of the archipelago. The Dutch KPM, the biggest coastal navigation company, had a line

<sup>1</sup> Algemeen Rijks Archief (ARA), The Hague: Koloniën (Kol.): MMK 166. *Memorie van Overgave* (MVO) on West Sumatra by W.A.C. Whitlau, 1926.

<sup>2</sup> ARA: Nederlandsche Handel-Maatschappij (NHM): Vol. 9132. Verslag sub-agent Padang 1929, 1930.

<sup>3</sup> ARA: Kol.: MMK 170. MVO on West Sumatra by A.I. Spits, 1937.

running between Batavia and Sabang, with an extension to Penang and Singapore. Just as the KPM began its operations, a consortium of Chinese and Dutch businessmen in Padang opened a rival line to Penang and Singapore. It is remarkable that these private entrepreneurs, not bothered by any political desire to promote Batavia, focused on Singapore (A Campo, 1992: 273–278; Kamer van Koophandel, 1890: 5; 1907–1938).

## 5. Deterioration of the transport network, 1942–1965

The years between 1942 and roughly 1965 were years of political chaos and economic decline in the wake of the Japanese occupation, the war of Independence, the nationalization of Dutch firms, the PRRI rebellion, and the coup of 1965. In this period it is possible to discern four trends.

First, during the years of political turmoil the transport network was allowed to deteriorate, due to the shortage of funds and civil disturbances. Since four-fifths of the estates went out of production, several roads, such as the one to Kerinci, lost their relevance. Coastal navigation received a blow when the Dutch KPM withdrew from Indonesia in 1958 to circumvent seizure of its ships by the Indonesian government. In 1970 most locomotives were more than 30 years old and the rolling stock was more than 50 years (Esmara, 1971).

Second, the railway was at last totally surpassed by road transport. During the early phase of motorized transport, cars had supplemented the railways as feeders. In the 1920s private buses, often in Minangkabau hands, became a serious competitor because of their speed, flexibility, and cheap fares. During the Depression competition became murderous, but the trains recovered some ground by introducing price reductions of up to 50 per cent, new timetables enabling return trips Padang-Bukittinggi in one day, and even car transport in the Anai Pass where the train lost most time. The state railways also received some protection from the high taxes imposed on private bus companies. Soon after Independence the train lost nearly all passenger and freight transport with the exception of the coal to buses and lorries. The rivalry between the bus companies was also the reason that few of them survived any length of time (Kamer van Koophandel, 1926: 7; 1929: 64–65; 1933: 18; 1934: 12–13; Safwan, Taher & Asnan et al., 1987: 44–53). In colonial times (as today) cars and buses kept prices low by overloading them with passengers.<sup>4</sup>

Third, the transversal link, from Padang to the east coast and on to Singapore, was reinforced. The Japanese, afraid that their coal ships would be sunk on the round-Sumatra voyage to Singapore, finally made the railway link from Umbilin to Pekanbaru in order to shorten the sea voyage. Thousands of forced labourers lost their lives in the construction of the track. It is ironic that this railway, discussed by the Dutch for three-quarters of a century, was finished

<sup>4</sup> ARA: Kol.: MMK 166. MVO on West Sumatra by W.A.C. Whitlau, 1926.

on the day the armistice was signed, and never used because of its poor quality (Abdullah, 1987). In 1958 Central Sumatra (West Sumatra and Riau) revolted under the banner of the PRRI (*Pemerintah Revolusioner Republik Indonesia*). In the two years before the open rebellion, the regional military had already taken control of the provincial administration and strengthened the link from West Sumatra to Riau. The improved road facilitated the direct export of goods to Singapore used to finance the rebellious administration (Leirissa, 1991: 57–58).

Fourth, air transport took off and regular flights to Padang were finally started. Two small airfields in Bukittinggi and Payakumbuh were used for some time but then neglected and deserted (Rutz, 1976: 87).

## **6. Rehabilitation and expansion of the network, 1965 to the present**

The New Order government, that seized power in 1965, has stimulated stable economic development. Among the factors in this growth have been: political stability, centralized economic planning, and foreign investors. These factors have also played a role in the rehabilitation and expansion of the transport network in West Sumatra.

The economy of West Sumatra has shown steady growth. The cement factory has been rehabilitated and expanded. Closely linked to the growth of the cement production was the vital decision of the central government not to close down the coalmine. The state and foreigners have invested in the production of coal, which is necessary to power the cement factory. The latest development is the new attempt to establish big plantations or to put old ones back into production again, especially in Kerinci. Palm-oil (*kelapa sawit*) is seen as the crop of the future, but still has to prove itself in West Sumatra (Lains, 1989).

A new, short railway was built from Indarung directly to Teluk Bayur to transport the cement to the harbour, and conversely to bring up coal to the cement factory. The only remaining transportation over the old trunk line is of coal from the Umbilin mine to the harbour. In short, the railway is only viable for the transport of heavy bulk goods that are produced in one spot and carried to another single destination. The transport of bulk goods that have to be collected first, like rubber, is not economical. In 1991 the Swiss government was considering a loan of over \$ 100 million for the rehabilitation of the trunk line, the purchase of new locomotives and the repair of broken locomotives (Haluan, 1991: 14 September).

Because of the recent increased production, coal and cement dominate the volume of trade (not the value) in the harbour even more than they did in colonial times. The present government has reorganized the Indonesian harbours into four companies, each centred on one main port: Medan, Jakarta, Surabaya, and Ujung Pandang. In 1983 the harbour of Teluk Bayur became part of the second harbour company, that centred on Jakarta. Teluk Bayur is now supposed to be a feeder for Jakarta, with a special eye to strengthening the latter's rivalry with Singapore. However, Teluk Bayur continues to be an export

harbour in itself (Robinson, 1989). At present the dock area is being expanded and upgraded with the financial assistance of the World Bank. The plans are discussed with representatives of the regional and municipal administration, the cement factory, coalmine, and plantations, but not of the shipping lines. The West Sumatran branch of the *Gabungan Perusahaan Ekspor Impor*, a union of trade firms, complains that they are not given access to sufficient cargo space in the visiting ships; an echo of complaints in the colonial past. With the emergence of the NICs in East Asia the idea that Teluk Bayur is on the 'wrong' side of Sumatra is felt even more keenly than before (Lains, 1989: 448).

Transport by buses, lorries, and cars has increased tremendously. The trade balance of West Sumatra has become very skewed, because exports are shipped, whereas most imports come overland from Medan, Pekanbaru, and Jakarta (Esmara, 1971: 52–53; Lains, 1989: 448). The road network has been upgraded. Road construction seems to be aimed more at national administrative integration and long-distance passenger transport, than at facilitating transport from plantation areas. That is to say, the trip by bus from Padang to Medan or Pekanbaru is smooth, whereas the trip to Kerinci is slow and stressful.

One major project has been the Trans-Sumatra Highway. This road, from the ferry to Java right up to Banda Aceh, was already projected in colonial times, but never completed to a stage at which the road was reliable. In 1985 the connection was at last established by linking existing stretches to each other. The catalytic development impact has been limited, but the road no doubt contributes to the national integration (Leinbach, 1989: 79–80). The road is in good condition, but actually does not resemble a highway; some parts are winding, narrow, and without a median strip. The road has been made through the eastern plain, and, in a sense, Padang is once again on the wrong side of the Barisan Range. The road does, however, run via the West Sumatran towns of Solok and Bukittinggi. In the long run the Trans-Sumatra Highway may result in a partial shift of the West Sumatran economic centre back to the highlands again.

Aviation has spread its wings. In 1968 the runway of Tabing airport was 1300 metres and could only handle Dakotas and Convairs. In 1974 it was lengthened to 1700 metres, so that F27s and DC9s can land (Rais et al., 1975: 90). In 1994 there were 35 flights per week to Jakarta, 7 to Medan, 4 to Pekanbaru, 3 to Singapore, 4 to Palembang, 5 to Kuala Lumpur, 4 to Tanjung Pinang, and 3 to Batubesar. These figures show that the flights are concentrated on Jakarta.

In 1990 the administration of West Sumatra had high expectations of a new international airport at Ketaping, forty kilometres north of Padang, where widebodied aircraft, filled with foreign tourists, could land. Unfortunately, the expected loan from the Japanese was withdrawn. The Minister of Communications, who happened to be a Minangkabau, fought hard, but in vain, to interest other investors. In 1993 with a new, non-Minangkabau minister, Ketaping airport had less priority and the construction has been postponed indefinitely (Singgalang: 4 April 1990, 5 August 1993).

## 7. The drives behind the development of the transport network

T.R. Leinbach and E.J. Taaffe *et al.* have, independently of each other, made a similar model for the development of export induced transport networks in former colonies. In the beginning there is a string of small sea harbours with paths or rivers leading at right angles to the limited inland trading field. The transport needs of the administration, army, mines, and commercial agriculture form the subsequent stimuli for other modes of transport, commencing with rail. First, one port becomes the central node, with trunk lines running inland; then feeder routes and lateral links along the coast develop and a city hierarchy emerges; finally there is the emergence of high priority linkages between the places that have become most important. Roads develop as supplement for and competitor to the railways (Haggett, Cliff & Frey, 1977: 89–94; Leinbach, 1989: 61).

It goes without saying that West Sumatra fits fairly well into this general model. This geographical model also implies an exterior partner, so that we arrive at three levels. For West Sumatra these three levels are: Padang as central port in the regional network; Jakarta and Singapore as higher order centres, with other destinations in Japan, Europe, and the United States beyond the horizon; and the Padang Highlands, coastal plain, and small islands as hinterland and 'foreland'. The development of this transport network has contributed to the internal economic integration of West Sumatra and the integration of the province into Indonesia and the wider world. I do not need to point out that this case confirms *grosso modo* the integration of the whole archipelago as sketched by Dick. The main deviation was that in the early nineteenth century, possibly temporarily, already half of Padang's trade was with Java (De Stuers, 1849–1850: II, 188).

During the Dutch colonial period there was a remarkable consistency in the growth of the transport network. The years of political turmoil (1942–1965) interrupted several trends, but the New Order seems to have picked up the thread from colonial times again. Continuity can be traced in: the expansion of road and air transport; the fact that West Sumatra is, from a developmental perspective, on the wrong side of Sumatra; the coal and cement that form the firm base for the business in Teluk Bayur; and the growing focus on Jakarta (with the Trans Sumatra Highway leading to Java, Teluk Bayur as formal feeder of Tanjung Priok, and five daily flights to the capital). Changes can be found in the reduction of the railways to a means by which to transport coal and cement only, and the fact that plantations are no longer directional points for road construction. With recent or planned investments in rail and plantations these discontinuities may after all become continuities. Another change is that whereas in colonial times Minangkabau were compelled to provide labour for the roads, today the citizens are forced to provide land without full financial compensation.

At the regional level some links in the transport network have not always been welcome. To be more specific, the Dutch administrative and economic elite in West Sumatra repeatedly tried to obstruct any connection between the highlands and the east coast, Pekanbaru in particular, which at the

expense of the Minangkabau producers and consumers. To understand this aberration from the general trend of national integration, we must realize that cities at all levels compete with each other. Seen from the perspective of the regional node, here Padang, we must replace the above-mentioned three-tiered geographical model, by a quadri-partite sociological model with the higher order centres, regional main port, hinterland, and the peer-ports of the regional node. In the sixteenth century the peer-ports of Padang were the harbours on the west coast that have now sunk into oblivion. In the late colonial period Medan, Palembang and, increasingly, Pekanbaru were peer-ports.

The economic and political elite of a coastal port will always seek to improve transportation with the hinterland and the higher order place (hence the continuous complaints about poor roads to the plantations and the limited cargo space in outward bound ships). A link with a peer-port may be considered profitable or detrimental depending on the assessment of one's strength vis-à-vis the rival. In colonial times, whenever Padang seemed unable to compete with the east coast, the Dutch elite (Van den Bosch, Whitlau, Chamber of Commerce) tried to cut the transportation (by foot, road, and rail) to the latter destination. Two conditions seemed necessary to make this quadri-partite model valid. Firstly, the total supply of goods and passengers must be seen as a zero-sum game; transport to a peer-port must then be perceived as a loss for the regional main port. Secondly, the administration of the whole country must be weak, decentralized or not interested, because from the national point of view the connection between peer-ports is desirable. The present strong central government has managed to build and maintain good roads between Padang and the east coast.

Learning from the past, what are tentative strategies for the future? The heavy traffic in coal and cement must be kept off the road as much as possible; a limited railway network is very appropriate to this task, but trains will not be able to compete for passenger transport. The roads are well developed; priorities are an improved connection with Kerinci, and safety measures, such as the widening of roads. An international airport may not be financially feasible, but will probably promote the old oneway tourist overland trip from Medan to Padang.

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