Bambang Purwanto

The Economy of Indonesian Smallholder Rubber, 1890s–1940

Abstract

This is a survey of the development of Indonesian smallholder rubber cultivation in the late colonial era. It deals with basic issues such as incentives for rubber cultivation (high world market prices), common geographical characteristics of the rubber-producing regions of Jambi, Palembang and South Kalimantan (river access) and phases of development (turning-points around 1909/12, 1926/29, 1932/34), the structure of the internal smallholder rubber market and the economic implications of rubber cultivation.

1. Introduction

Extensive studies about the economy of Indonesian smallholder rubber during the colonial period are singularly scant. In fact, the forty years prior to the World War II had seen a flourishing of agricultural initiative taken by the Indonesian rubber smallholders to expand export production. This study aims to describe and analyse how the Indonesian smallholders expanded the cultivation of rubber, and the economic implications of that expansion, from the early twentieth century to the eve of the Second World War. It deals mainly with rubber smallholders in South Kalimantan and the residencies of Palembang and Jambi, although smallholder rubber cultivation also took place in other regions, such as Riau, Aceh, East Sumatra, Bangka, West Kalimantan, and Lampung.

2. From forest production to Hevea

The history of the rubber economy in Indonesia can be traced back long before people began to cultivate rubber trees in the late nineteenth century. Traditionally people in the Indonesian archipelago gathered various types of *getah* from the forest for export. When world rubber demand and concomintantly prices moved up in the late nineteenth century and the early twentieth century, the export of *getah* from this area also rose. Rubber prices in Bengkulu, for example, fluctuated from a low at 68 guilders to a high at 180 guilders per picul between 1890 and 1899. Even in the early twentieth century, when the prices of

most agricultural and forest products were falling, *getah* still fetched a good price, about 123.50 guilders per picul (Koloniaal Verslag, 1890–1902). In the residency of Palembang, total exports of rubber products rose from 6,622 picul (1 picul = 62.5 kg) in 1891 to 12,419 picul in 1900 (Blink, 1916: 199).

The beginning of smallholding rubber cultivation in colonial Indonesia was characterized by the cultivation of Ficus elastica, a wild rubber plant that also grew naturally in the forest of the archipelago. The plant was well known by different names in different places, such as *rambung* around Palembang and *karet batang* in Bengkulu. The people began to cultivate Ficus in the 1890s, when they were prevented by nature and by government policies from collecting Ficus *getah* from the forest. People cultivated Ficus trees during the periods when the prices of cash crops such as coffee, tobacco, pepper, and cotton were depressed. For example, whenever pepper and coffee prices fell during the late 1890s, people in some parts of Bengkulu and Palembang turned to Ficus. The Ficus smallholdings were found scattered throughout several residencies, but the cultivation never expanded widely, despite the colonial government's attempts to encourage the people to do so in several places in the last decade of the nineteenth century. No sooner did the people begin to tap their cultivated Ficus trees, then a more valuable rubber plant, Hevea, was introduced, and trial planting proved that Hevea was more suited to the climate and soil conditions of most parts of colonial Indonesia (Purwanto, 1992: 116–124).

Changes in rubber technology and industrial development in America and Europe, particularly the rise of the motor car, required more rubber, forcing up rubber prices. Whenever the total world consumption of rubber increased sharply, efforts were made to cultivate rubber because wild rubber trees could not satisfy world rubber demand. Although there are different kinds of rubber trees, the Hevea tree produces more latex, and its composition is more suited to the needs of rubber consumers.

Hevea brasiliensis, or para rubber, was a newly introduced cash crop to colonial Indonesia. It is a perennial tree crop, which has an economic life of about 25 years. The tree is tappable when it is 45 cm in girth at a height of about 100 cm above the root collar. This state is usually reached in the fifth or sixth year of life and at an age of 15 years the Hevea tree yields its highest output. It grows best on well-drained tropical lowland, at an elevation not exceeding 600 metres. The tree will grow most rapidly at an elevation below 200 meters, but it is inadvisable to cultivate it above 700 metres. The mean annual temperature suitable for rubber is from 24–28°C. An annual rainfall of 2,000 mm is most suitable for this crop, and the number of rainy days should not exceed 150 a year.

It is difficult to know when smallholders started to cultivate Hevea rubber in colonial Indonesia. According to one source, the oldest Hevea trees owned by Indonesian cultivators were planted in 1910. However, some references note that the first cultivation of Hevea rubber by Indonesian smallholders had taken place earlier. In an official speech, a Dutch civil servant suggested that the people of Sumatra had started to cultivate Hevea rubber around 1905. A British repre-

sentative, who visited Jambi in order to investigate the position of smallholder rubber, mentioned that the oldest Hevea holding in the residency had been opened in 1905 (Cumming, 1924: 1–8). In addition, the former resident of Palembang argued that 1905 was the beginning of smallholding rubber cultivation in Palembang Residency. However, other references suggest that the people in Jambi must have planted Hevea trees from at least 1904 or even in the earliest years of the twentieth century (Purwanto, 1992: 184–189). In South Kalimantan, according to some reports, the first rubber cultivation by local people took place somewhat later, in 1910 (Lindblad, 1988: 59–61).

In short, although the people may have cultivated Hevea rubber at the very beginning of the twentieth century, there is no evidence that people had cultivated Hevea rubber on a large scale and that the Hevea rubber had become an important export crop for the Indonesians before the late 1910s. There were few Hevea rubber seeds or seedlings available for planting at that time. As the Malay peninsula, later the main supplier of rubber seeds and plants for colonial Indonesia, was not able to cope with the great local demand, and as the local Hevea trees had not yet produced many seeds, there was little chance for the people of colonial Indonesia to expand Hevea cultivation in this period.

The great expansion of smallholder rubber cultivation was not an Indonesia-wide phenomenon. Rubber holdings were found in certain parts only, particularly in the lowland areas of Jambi, Palembang and South Kalimantan. Although there were some rubber smallholdings in Java, the Javanese never adopted rubber as their main cash crop during the colonial period. In deciding why the cultivation rubber was expanded in one place but not in others, several factors must be considered, including topography, soil types, climatic conditions, environmental circumstances of local rivers in relation to vegetation and to other economic activities, alternative cash crops, and government policies. Rivers were a very important factor in the expansion of smallholder rubber cultivation in Palembang, Jambi and South Kalimantan. Almost all small rubber holdings were located within easy access of a river. There is no evidence that the expansion of smallholder rubber was supported by the development of infrastructure, particularly the construction of roads and railways.

In Jambi, smallholding rubber was found in nearly all subdistricts, except in the swampy regions or places where people were already cultivating other cash crops, and it was the single most important cash crop in Jambi during the late colonial period. The cultivation of Hevea in Palembang also spread over nearly all subdistricts. Ogan Ulu, Ogan Ilir, Lematang Ilir, Komering Ulu, Rawas, Komering Ilir, and Musi Ilir were the main rubber-producing areas (Warren & Van Staalduinen, 1925: 2). In South Kalimantan people cultivated Hevea mainly around Hulu Sungai, particularly in Kandangan, Amuntai, Barabai and Tanjung. In some parts of those residencies, there was little or no cultivation of Hevea because other cash crops, for which the soil and climate were more suitable, had been firmly established there or because the people were involved in other occupations. For example, in the swampy areas of Palembang, Jambi, and South Kalimantan people were more interested in coconuts and in fishing.

In Kerinci the land was suitable for rice and coffee. In many places in Upper Palembang, such as Semendo and Pasemah, people tended to cultivate coffee, pepper and rice. In Tebing Tinggi, where land was suitable for coffee cultivation, there were only 6,000 rubber trees owned by local people in 1925 (Warren & Van Staalduinen, 1925: 4).

The people of Palembang, Jambi and South Kalimantan cultivated rubber in various environments. Firstly, rubber was cultivated on the land along the river banks, where primary forest was mainly located. Prior to the 1920s, the expansion of smallholder rubber cultivation was grown mainly on this type of land. Secondly, rubber was planted on swampy land, but cultivation on this type of land was limited. Thirdly, the small cultivators planted rubber trees on *talang* land, which supported secondary forest and poor *lalang* land. Finally, the people planted rubber trees on the higher plains or on hilly slopes. The last was largely a post-1920s phenomenon. The number of trees owned by a small cultivator was greatly influenced by the amount of land at his disposal as well as the amount of labour, capital and time available. A small cultivator usually owned less than 200 rubber trees but it was common for a cultivator to own 800 to 1,000 trees. In 1916 a Dutch official noted that the average number of rubber trees owned by a small cultivator was 500. It was reported in 1924 that the number of rubber trees owned by the small rubber cultivators in Jambi varied between 1,000 and 2,000 trees. Several reports note that some Indonesian cultivators, particularly the local elites and successful traders in Palembang, Jambi and South Kalimantan owned more than 10,000 rubber trees. Others had 30,000–50,000 rubber trees on separate holdings (Purwanto, 1992: 235– 237).

Why were the people in several disparate parts of colonial Indonesia so eager to expand the cultivation of Hevea rubber? As mentioned above, the expansion of Hevea rubber cultivation occurred when world consumption of rubber increased sharply forcing up the prices of rubber. A good price for rubber was thus one important factor which induced Indonesian smallholders to grow rubber. Besides this, there is a variety of other reasons but there was no single decisive factor, as different factors emerged in different places at different times. In order to simplify matters, seven reasons can be singled out. First, Hevea rubber was a substitute for earlier cash crops whose prices had decreased sharply. Second, the soil and climatic conditions of most rubber areas were suitable to rubber and abundant land was available. Third, Hevea rubber was preferred for technical, capital and labour reasons. Fourth, the cultivation of rubber was only a part-time occupation. Fifth, Hevea rubber was regarded as complementary to other crops, which had been cultivated earlier. Sixth, the people planted Hevea to reforest their abandoned *ladang*. Finally, people grew Hevea rubber because it gave a substantial economic return (Purwanto, 1992: 202–203).

The historical, geographical and economic relationships between rubber-producing areas in Indonesia and the Malay peninsula are other factors that must be considered when explaining the expansion of smallholder rubber in colonial Indonesia, particularly in Palembang, Jambi and South Kalimantan. In this connection three important relationships should be noted. Firstly, the penin-

sula, particularly Singapore, was the main market for various commodities produced in Sumatra and Kalimantan. Secondly, the close geographical proximity and long-standing relations between Sumatra, Kalimantan, and the Malay peninsula encouraged the regular movement of people between them. Finally, many pilgrims to Mecca from those areas used the peninsula as their transit port. Therefore, when the cultivation of rubber began in the Malay peninsula in the late nineteenth century, these migrants, traders and Mecca pilgrims began to bring in rubber seeds and plants to Sumatra and Kalimantan. Also, a large number of rubber seeds and plants were brought in to Palembang, Jambi and other parts of Sumatra whenever migrants who had worked on the rubber plantations in the peninsula returned home in the 1910s. As more people became interested in Hevea, middlemen, particularly Mecca pilgrims, indigenous, Chinese and then Japanese traders, began to sell rubber seeds and plants which were available commercially in the Malay peninsula.

There are mixed opinions about the role of the government and of the local population in the introduction and great expansion of Hevea rubber as new commercial crop in colonial Indonesia. One view tends to see the colonial government as the driving force behind the expansion of smallholder rubber in colonial Indonesia. This view is based mainly on the knowledge obtained from several places where there is evidence that government officials were involved in the early stages of rubber cultivation, the government making seeds available to the local people. The campaign to cultivate rubber in Jambi was particularly marked when O.L. Helfrich, who was known to the local people as *Tuan Pendek* ('Mr. Short'), was Resident of Jambi between 1906 and 1908. D.J.G. van Setten, who was an agricultural official in Palembang in 1910s, also greatly supported the cultivation of Hevea by the local population.

The second view argues that the colonial government initiative was not the only factor in the introduction and the great expansion of rubber cultivation in colonial Indonesia. People started to cultivate and to expand rubber cultivation for themselves, without any stimulation from the government. The government became involved only after rubber smallholdings were established. There is evidence that a cultivator in Muara Bungo, Jambi, bought rubber plants from the Vallambrosa Estate at Klang, in the Malay peninsula, and began to grow them on his land in 1905. Reports on South Kalimantan and Palembang note that people learned how to plant, tap and coagulate rubber from the nearest foreign plantations, even from rubber plantations in the Malay peninsula. Whenever they returned home, they started to set up their own rubber holdings and passed their knowledge on to their neighbours free or for payment. Hence, the interest of government officials, such as O.L. Helfrich and D.J.G. van Setten, represented personal encouragement on behalf of these officials rather than formal government policy (Purwanto, 1992: 196–199). The colonial government itself had no interest in the expansion of smallholding rubber until after the Indonesian smallholders had already developed rubber cultivation on a large scale in the early 1920s.

The first great expansion in smallholding rubber in colonial Indonesia occured between 1909 and 1912, when rubber fetched good prices. In this period, rubber fetched an average of 200 guilders per picul on the local market. In 1912 rubber was purchased for 175–225 guilders per picul on the local market, but in some places it reached 250 or even 350 guilders per picul in the same years. In the years between between 1907 and 1911, Jambi imported seeds and plants, particularly rubber, to the value of 29,000 guilders and this rose to 45,000 guilders in 1912. According to one estimate, about 2.1 million Hevea seeds were imported into Jambi during those five years (Purwanto, 1992: 203–204).

A similar trend occurred in Palembang and South Kalimantan. In 1913 and 1914 rubber prices dropped to a low of 40 guilders per picul but this did not stop the people from planting rubber, for when the price recovered to over 100 guilders per picul in 1915, new plantings could be found in all parts of the rubber-producing areas. Low rubber prices temporarily reduced the rolling tide of expansion of smallholding rubber, but people in some places such as Ogan Ulu and Komering Ulu in Palembang and Muara Tembesi in Jambi continued to plant new rubber trees.

The great expansion was temporarily set back by low prices between 1920 and 1922, but people responded to the subsequent higher prices which prevailed until 1928 by expanding their rubber holdings throughout the region. Although a new export duty of 5% was levied on smallholder rubber in 1925, the small cultivators benefited from the rise in rubber prices after the British colonies introduced a restriction scheme (the Stevenson Scheme, 1922–1928), in which the Netherlands Indies did not participate. The years 1926 and 1929 were other high points in the expansion of the cultivation of rubber, despite some efforts made by local authorities to prevent the people from planting more rubber and to encourage them to plant other crops, particularly food crops. During the depression in the 1930s at the beginning there was little new planting but after 1932 the people once again turned to rubber. The implementation of the special export duty, production and export restriction of 1934, in accordance with the International Rubber Restriction Agreement in which the Netherlands Indies participated, and the prohibition of new planting almost brought the expansion of smallholder rubber in colonial Indonesia to a standstill. In fact, the government could not stop people from planting new Hevea trees. The main problem was that the interest of the local people had reached a low ebb. It was not until 1939 and 1940 that the small cultivators were again allowed by the government to plant new rubber trees.

There is no accurate information about the number of rubber trees owned by Indonesian smallholders until the late colonial period. One estimate notes that there were 25 million smallholder rubber trees in Palembang in the early 1920s but another report states that the number of smallholder rubber trees in this residency in the mid-1920s was about 16 million, while a rubber consultant estimated that there were 140 million rubber trees in Palembang in 1932. Other reports note that there were 139,287 smallholders with 152,756,864 trees between them in Palembang in 1936 and 43,189 smallholders with a total of

72,714,453 trees in Jambi in that year (Purwanto, 1992: 238–241). The total smallholder rubber area in 1940 was estimated at 189,000 hectares in Palembang and 71,000 hectares in Jambi. Yet another publication notes that the total smallholder rubber area in Jambi was 188,500 hectares in 1942 (Van Gelder, 1950: 466–467; Sukma, 1970: 8). According to an account in 1924, there were 8.9 million rubber trees in Hulu Sungai but in 1936 the total number of rubber trees belonging to smallholders in that region had risen to 49 million trees (Lindblad, 1988: 66).

Exports of smallholder rubber from three main rubber-producing areas in colonial Indonesia, *i.e.* Palembang, Jambi and South Kalimantan, increased considerably from the late 1910s. Jambi exported only about half a metric ton of smallholder rubber in 1911, but 4,300 tons in 1919 whereas Palembang exported 477 tons. Rubber exports continued to increase throughout the 1920s and 1930s. Jambi achieved an annual level of exports above 20,000 tons in 1929, and more than 30,000 tons in 1937. Palembang reached annual exports of more than 20,000 tons in 1934 and more than 30,000 tons in the following years (Clemens, 1989: 235). Although rubber prices were low and exports were restricted from the mid-1930s, exports of smallholder rubber from these three regions remained high (Clemens, Lindblad & Touwen, 1992: 66).

3. The economy of smallholder rubber

It was widely noted that smallholding rubber cultivation required relatively little liquid capital and labour. However, a report notes that in the early years of expansion a cultivator in Jambi paid 22.5 cents for each rubber seed imported from an estate in Klang, but prices fell when when more seeds and plants were obtained from the Malay peninsula. Another report notes that people in Palembang would pay 10 guilders for 1,000 rubber plants imported from the Malay peninsula. In the second half of the 1910s, the people of Palembang purchased 30 cm high rubber trees for 7 to 14 guilders per 1,000 plants. In the same period the locally germinated rubber plants were sold for 8 guilders per 1,000 in Jambi. A government publication mentions that a man from Kandangan in South Kalimantan purchased rubber seeds in Penang and was then considered to be the very first rubber cultivator in his village. A report notes that an indigenous trader in Baturaja, a small town in the residency of Palembang, imported some 100,000 young rubber plants from the Malay peninsula in 1917. According to a report in 1926, *mekul* seeds were purchased at 25 cents per 1,000 seeds while small cultivators were willing to pay 30 guilders for 1,000, six- to seven-month rubber plants. Thus, as far as the smallholders were concerned, the rubber expansion involved cost. They had to pay for the rubber seeds and seedlings, particularly in the early stages of expansion. It was not until local seeds were readily available that seeds could be obtained at no cost.

It is an undeniable fact that people did not need large supplies of labour to plant and look after the trees, but they did require additional labour from their

own family or from outside to help them tap the trees. In the early stages, the family was the main source of labour supply for most parts of the rubber-producing areas in colonial Indonesia. For example, a 1916 report on Sarolangun, Jambi, notes that children sacrificed many schooldays to help their parents to tap when rubber prices were high. There are at least three reasons why the smallholders employed hired labour to tap their trees. First, family labour was no longer sufficient to cope with the large number of mature rubber trees as the cultivation of rubber took place in areas with a low population density. Second, the owners had to work on their dry or wet rice-fields or look after other crops such as coffee, pepper and cotton as the majority of the people undertook other agricultural activities as well as planting rubber. Third, they employed hired tappers when rubber fetched high prices.

The smallholders began to hire labour as early as the second half of the 1910s, when the first wave of large-scale planting began to produce latex. Several reports between 1913 and 1917 notes that people in Palembang and Jambi employed hired labourers to help them tap. But it was not until the 1920s when more rubber trees had became tappable and rubber prices were high that a large number of hired labourers came to work on the rubber holdings of small cultivators. One report notes that 57 per cent of smallholder rubber in Palembang required hired labour in the 1920s. In addition, according to a report in 1924, 30 per cent of the tappable rubber trees in parts of Palembang were left untapped owing to an insufficient supply of labour. The smallholders usually employed from one to five hired tappers, but those with large rubber holdings hired from five to twenty tappers.

Most hired labour came from outside the rubber-producing areas. Only a few local people were interested in working as tappers because most secured their living from their own rubber trees and other forms of agriculture. Moreover, as already mentioned, the population density in many rubber-producing areas was low, but the local people cultivated a large number of rubber trees. The imbalance in population density caused varying degrees of dependence upon hired labour between the rubber-producing area of colonial Indonesia. For example, the smallholder rubber in Jambi was more dependent on hired labour than were rubber cultivators in Palembang or South Kalimantan. In addition, rubber cultivators in Upper Jambi, Palembang, and South Kalimantan were more dependent on outside tappers than those in regions with a relatively high population density and less competition. The rubber cultivators in Upper Palembang, for example, had to compete with coffee cultivators for hired labour.

Komering and Banjar were the main origins of hired tappers in Palembang; rubber cultivators in Jambi tended to employ Kerinci, Banjar, Komering and other peoples from West and Central Sumatra prior to the mid-1920s. Although in some rubber-producing areas there were some Chinese hired labourers, Chinese labour was never important in the smallholder rubber sector because the Chinese usually demanded high wages. In Jambi, for example, an Indonesian labourer was paid 1.50 guilders a day but the Chinese wanted 2.50 guilders in the early 1920s. When the smallholders required more labour in the 1920s, the

labourers came from Java, some of whom came directly from Java, but the rest were already settled in Sumatra. The Javanese were both free and contract labour. In Sarolangun, for example, 263 out of the 401 hired tappers in *marga* Batin VI were Javanese. The foreign planters, miners and the supervisors on the government projects, were constantly complaining that Javanese contract labourers ran away before their contract was finished, particularly during the boom period of the 1920s. A rubber tapper working to a smallholder obtained more than one guilder a day in the early 1920s, while most foreign plantations paid less than 50 cents per day. Some reports in 1937 note that 93 labourers run away from a foreign plantation in Jambi, as a labourer could earn 1.50 guilders a day by tapping smallholder rubber, compared to less than 1 guilder on the foreign plantation.

There was a great diversity in the ways in which small rubber owners paid their hired tappers. The hired labourers were mostly sharecroppers, although cash payment did exist in some main rubber-producing areas in Palembang, Jambi and South Kalimantan. A common practice was for hired tappers to be paid according to the amount of latex they brought in, divided 50–50, which was known by local people as the *bagi dua* system. The labourers and owners negotiated who would provide the tapping equipment, buy the acid and prepare the latex. This was the system favoured when rubber prices were high and there was sufficient labour. But the tappers, who were then usually freed from other duties, received higher shares, from two-thirds (the *bagi tiga* system) to three-quarters (the *bagi empat* system), three-fifths or even four-fifths (the *bagi lima* system) of the yield if the rubber price slumped or production was low or there was a shortage of labour or the holding was far from the town or village or there were many wild animals about, particularly tigers. In this connection a report on Jambi notes that people employed the *bagi dua* system only at the minimum price of 20 guilders per picul, and the hired tappers obtained from three quarters to four-fifths of the yield during the period of low rubber prices which ensued at the end of the 1920s.

The quality of smallholder rubber was usually poor and it had to be reprocessed before being exported. Although some rubber factories were built in rubber-producing areas in the mid-1920s, most of the smallholder rubber was still shipped to Singapore for remilling. In the early stages of expansion when rubber still fetched high prices, the smallholders produced mainly dirty, wet slabs and scraps. In fact, rubber from Jambi was the worst prepared smallholder rubber in colonial Indonesia until the late 1920s. The people in Jambi produced wet slabs containing at least 40 per cent water and moisture. In some places this extended to more than 50 per cent of the slab and was about 20–30 cm thick. As a result, the producers received a low price for their rubber, to cover transport costs, remilling costs and commission. For example, the price for good rubber in Jambi was about 100–125 guilders in the late 1910s, but inferior village rubber fetched no more than 50 guilders per picul. From the late 1920s, in the wake of government regulations, complaints from remillers and significant price differences between inferior and good rubber on the local market, smallholders began

to produce larger quantities of dried, clean and thin rubber slabs, both sheet and crêpe. In Palembang, for instance, the price of smallholder unsmoked sheet was 15 guilders per 100 kg in the mid-1930s, whereas the price of dry slab was only 7–9 guilders per 100 kg. Another report cites the price of smallholder unsmoked sheet in 1937 at 20 guilders per picul while the price of slab was only 10.50 guilders per picul.

Two of the chief features of the rubber market in colonial Indonesia were its complicated networks and the significant role played by middlemen. The simple structure of the internal smallholder rubber market was as follows: the rubber producers, owners and tappers, sold their rubber to the middlemen, who then sold the rubber to remillers or exporters. However, smallholder rubber, in fact, went through different market transactions before being remilled and exported. There were various ways for the people to market rubber, but the middlemen always took a major part. First, the producers sold their products to traders at the village level. These traders were usually local leaders, *haji* or the owner of a village shop. Some were agents of other traders, remillers or exporters who were resident in the towns. Some traders at the village level were also local people with large rubber holdings. Second, rubber was purchased by the middlemen who came to the producing areas. They bought rubber from owners, tappers and village traders in the remote interior. Third, the owners, tappers and village traders brought their rubber to a nearby market, and sold it to other middlemen. Besides ordinary rubber traders, these middlemen also included boat-owners, the suppliers of goods, agents for textiles, beverage and foodstuff importers, and car drivers. Fourth, rubber producers and village traders sold their rubber directly to remillers and exporters in the towns.

Rubber prices were those given by the traders. The producers were barely aware of the real price. The farmgate price and market price in the interior usually ranged from 50 to 60 per cent of the rubber price in town and the latter price would be even lower than the standard export price. For example, rubber traders in the city of Palembang paid 60 guilders per picul for wet slab, but at the same time producers up-country received only 40 guilders per picul. The price of blanket in Singapore was 116 guilders per picul while the price for smallholder rubber in Palembang was no more than 66 guilders per picul in the mid-1920s. Moreover, the price accepted by producers in the interior corresponded to 35 per cent of the standard price. Another problem for the smallholders was that the middlemen commonly cheated them by using false scales. The middlemen thereby usually obtained some 10–20 per cent more than he paid for, with the deception reaching more than 30 per cent in some places.

The transactions were mainly undertaken in cash, but barter was still important in some places, particularly in the interior. The producers delivered rubber to the middlemen, and received various goods, such as salt, sugar, rice, dried fish, kerosene, matches, tea and textiles in return. Moreover, middlemen generally paid the producers in advance in order to secure their rubber supply. However, some people asked the traders to lend them money or goods, as they were not able to deliver sufficient rubber to meet their demands for cash and

goods. And there were many cases where people asked the middlemen to provide them with cash or goods, although they had no rubber. These people pawned their rubber holdings to the middlemen for a certain period. Consequently, some rich Chinese and Indonesian middlemen gained control of many rubber holdings belonging to smallholders in Muara Bungo, Jambi, as the latter had not been able to pay off their debts.

The internal rubber trade in the three main rubber-producing areas of Palembang, Jambi and South Kalimantan was controlled in approximately equal proportions by foreign and Indonesian traders, but remilling and exports were dominated by foreigners. The Palembang middlemen controlled the rubber trade in some ports of the interior of Palembang, and some Palembang traders purchased rubber from the small cultivators in Jambi. Minangkabau and Jambi middlemen were also important in the interior of Jambi although it was a residency in which Chinese traders occupied a very strong position. According to one report, all rubber traders in Sungai Duren, Jambi, were local people. A similar situation occurred in South Kalimantan, where the indigenous Banjarese played an important role in rubber trade in the rubber-producing areas of Hulu Sungai. But other reports note that although there were some Indonesian middlemen, there were only a few of them with much capital at their disposal. Part of their capital was provided by either Arab or Chinese traders. Most major Indonesian middlemen were in fact local leaders. The Indonesian nationalist movement enjoyed strong support in this society from the mid-1910s. Organizations such as Pamitran and Sarekat Islam used the issue of the rubber market to gain supporters among the producers and middlemen in the residency of Palembang.

However, the position of Indonesian middlemen in the rubber trade was strongly challenged by foreign traders, particularly the Chinese middlemen. Besides the Chinese, the other foreign middlemen in Palembang, Jambi and South Kalimantan were Arabs and Japanese, particularly after the mid-1920s. The strong position of Chinese middlemen was encouraged by the powerful position of Chinese rubber exporters and rubber remillers. The special relations between Chinese middlemen and exporters in Palembang, Jambi and Banjarmasin, and the Chinese traders and rubber remillers in Singapore was greatly to the advantage of the Chinese rubber traders in these three main rubber-producing areas. The strong position of Singapore, as the market for smallholder rubber from these residencies, was responsible for the unrivalled position of the Chinese middlemen and exporters in these residencies, because the rubber dealers and remillers in Singapore were also largely Chinese. The Dutch goverment attempted to encourage Western companies, particularly Dutch ones, to challenge the Chinese in the smallholder rubber sector. Some Western companies and estates bought rubber from smallholders and built remilling factories to process it. Moreover, the Dutch-owned Koninklijke Paketvaart Maatschappij (KPM) reduced transport cost for Western traders while sometimes refusing to carry rubber belonging to Chinese traders. The KPM also made arrangements between Indonesian middlemen and rubber dealers in Singapore. These

measures were successful in the early years. The KPM claimed that it transported 40 per cent of all rubber exported to Singapore. But in early 1924 it was reported that the KPM lost about 35,000 guilders per month in Jambi on the route to Singapore. The Western traders and remillers found that they were unable to buy large quantities of rubber from the smallholders, and therefore their factories could not work at full capacity. The Western companies were never as successful as the Chinese in the smallholder rubber sector of Palembang, Jambi and South Kalimantan. The colonial government also encouraged local people to form a cooperative in order to challenge the Chinese. In Komering Ilir (Palembang), the rubber co-operative 'Tjempaka', which was established in 1918, was expected to improve the quality of smallholder rubber in its factory and to provide an improved marketing capacity for the smallholders. However, the 'Tjempaka' co-operative and other similar ventures were closed in the mid-1920s because their efforts were hampered by lack of capital, irregular supplies of latex, fluctuations in rubber prices and strong competition from independent middlemen.

There was generally considered to be a difference in the response of small cultivators in different areas to declining rubber prices. During the depression of the 1930s, many small cultivators in Palembang gave up tapping their rubber trees but most cultivators in Jambi continued to tap because the people in Jambi regarded rubber cultivation as their main economic activity. Most were able to obtain some additional income when rubber prices were low, but only by gathering forest products, whereas most people in Palembang were engaged in other activities besides rubber cultivation and collecting forest products.

The economic implications of rubber cultivation in Palembang, Jambi and South Kalimantan were clearly considerable. In 1913 a Dutch official estimated that the average income of a rubber cultivator in Jambi was three guilders per day, while in 1916 another official reported that a smallholder with 1,000 tappable trees was able to earn 100 guilders per month net. According to official statistics, total exports of smallholder rubber from Jambi amounted to 77 million guilders between 1911 and 1924, of which about 30 million guilders' worth of rubber was exported in 1923 and 1924 alone. If the total export was wet rubber, the average price would have been 65 guilders per picul. As the price in the interior was 50–60 per cent of the export price, the average price for smallholder rubber in the interior would have been 35 guilders per picul. Thus, the rubber owners and tappers in Jambi received at least 40 million guilders or 2.8 million guilders annually during the first 14 years of the smallholder rubber boom. According to one estimate, the annual income of a small rubber cultivator in Hulu Sungai was more than 700 guilders. In addition, the smallholders earned at least 11.3 million guilders annually in Jambi, and 7.2 million guilders in Palembang, from the cultivation of rubber during the period 1918 to 1935. In 1924 it was noted that Chinese traders in Jambi obtained about 3 million guilders annually from the smallholder rubber trade, and that about 9–10 million guilders a year was received by the cultivators and tappers. A Dutch trading company reported that the total income received by the local people from rubber in Palembang was 95 million guilders over 13 years, or 7.3

million guilders annually, during the period 1927–1939, when the rubber prices were low.

Theoretically, these calculations could be used to estimate the income of Indonesian rubber owners and tappers. In fact, the precise income of rubber producers is difficult to estimate in view of the fluctuation of rubber prices, a dearth of information on the prices actually paid to the producers, and the varying payment for the hired labourers. It can be assumed that when the people started to produce rubber in the 1910s and continued to do so into the late 1920s, their average income per day was higher than in 1930. Before the 1930s, the maximum net income of a cultivator or tapper with 400 tappable rubber trees was 3 guilders per day. The minimum net income was at least 40 cents a day. After 1930 it was rare for the smallholder to earn three guilders a day and the minimum net income could be five cents or even less per day.

Although it is difficult to estimate the total income received from the cultivation of rubber, there is no doubt that the smallholder rubber sector greatly influenced the level of economic activity in rubber-producing areas. The living standard and purchasing power of the people were both higher in most rubber-producing areas, particularly between 1923 and 1927. For example, the income of a rubber tapper in rubber-producing areas along the Ogan River of Palembang was at least 75 guilders per month in 1925, compared to the income of a government official of 20–40 guilders per month in the same period. It was noted in many reports that the local people in rubber-producing areas had become familiar with luxury imports such as cars, bicycles, sewing machines, ivory buttons, ivory smoking pipes, Western cigarettes, iron beds, leather shoes, gramophones, furniture, silk, conserved foods, glass and stainless steel wares. A small shop in the interior of Kayu Agung Palembang where the consumers were mainly rubber producers, had 100 pairs of imported women's shoes. Many beautiful houses costing from 5,000 to 15,000 guilders were built. The cinemas and theatres in the towns of Jambi, Palembang and Amuntai had a regular clientele among the local people. People also spent a lot of money on wedding and circumcision parties.

Imports and internal trade depended on the value of rubber exports and rubber prices. After 1919 there had been a considerable increase in the quantity and value of cotton piece goods imported into rubber-producing areas. For example, in the four years between 1915 and 1918, the total import of cotton piece goods into Palembang and Jambi was only 7.7 million guilders or 1.9 million guilders annually, but the annual value of these imports rose to an average of 4.3 million and 5.3 million guilders during the years 1919–1922 and 1923–1929 respectively. It was reported that many rich people in the rubber-producing areas of Palembang, Jambi and South Kalimantan owned cars. There were 300 cars in Palembang in 1922, but more than 1,300 in 1924. One car was imported into Jambi before 1922, but 22 cars were imported in 1922 itself. In Sarolangun, where many people were dependent on rubber cultivation, there were 40 cars, including 30 private cars, in 1928. Nonetheless only those with large rubber holdings could buy a car, which were too expensive for ordinary cultivators. The local people

owned mainly bicycles, such as a Rover or a Raleigh. At least 19,000 bicycles were imported into Palembang and Jambi between 1910 and 1929. During the rubber boom of the 1920s, about 2,400 bicycles were imported into Jambi, 1,500 in 1925 alone. These bicycles came mainly from Europe and America, but beginning in the early 1930s more began to be imported from Japan. Moreover, there was a great increase in the import of sewing-machines. Only twelve sewing-machines were imported into Jambi in 1910 but more than 300 were imported annually from 1913. During the seven years of good rubber prices in the 1920s, more than 17,000 sewing machines were imported into Palembang and Jambi.

Although the provision of education for the Indonesian population was far from satisfactory before the outbreak of the Second World War, the returns from the cultivation of rubber enabled small cultivators to send their children to Western schools or to Islamic boarding schools outside their own area. One man in Palembang sent his daughter to Bandung to learn about textile production, while a boy from Komering Ulu passed the Cambridge examination for the Anglo-Chinese School in Singapore. Many rubber cultivators sent their children to Islamic boarding schools, the *pesantren*, in Java. Some of these children then pursued their education in the Middle East, particularly in Saudi Arabia and Egypt. Many people in rubber-producing areas used the *hujan emas*, golden rain, of high rubber prices to undertake the pilgrimage to Mecca. Before the rubber boom, the number of people from Jambi making the pilgrimage to Mecca was about 100 each season. During the first rubber boom of the 1910s more than 200 people a year went to Mecca from Jambi. The pilgrimage to Mecca was disrupted by the First World War, but after the war more than 1,000 people went to Mecca from Jambi in 1920 alone, at a cost of 800–1,000 guilders per person.

The number of pilgrims to Mecca reached a peak during the rubber boom of the 1920s. More than 25,000 people from the rubber-producing areas of Palembang and Jambi made the pilgrimage between 1923 and 1929. From Jambi alone, more than 2,000 people, out of a total population of just 160,000, left for Mecca in 1924, 280 of these people coming from a subdistrict which had a total population of 20,000. An unconfirmed report notes that about 10,000 persons from Jambi undertook the pilgrimage to Mecca in 1926. A similar situation was found in Palembang and South Kalimantan. More than 3,000 people from Palembang undertook the pilgrimage to Mecca in 1925, and 8,000 in 1927. From the *marga* (district) Meranjat, where most of the population was dependent on rubber, about 75 people went to Mecca in December 1927. A report on South Kalimantan notes that 10,000 pilgrims went to Mecca annually during this peak period. However, when rubber prices collapsed in the late 1920s, the number of Mecca pilgrims dropped very sharply. To take one example, the total number of Mecca pilgrims from Jambi in 1929 was only 269 compared to 997 in 1928. In the eyes of the colonial government, the pilgrimage to Mecca formed an important capital drain from the rubber-producing areas.

The people in rubber-producing areas were also able to gain exemption from unpaid forced labour, the obligation to work a certain number of days a year on various projects for the local authority and the colonial government. They

paid cash instead, disbursing 70 guilders per year and person during the high rubber prices of the 1920s, but about 10 guilders per year and person before rubber had become important in the early 1910s. Although the rubber price was declining in 1928, people in some parts of Jambi were still able to pay 47 guilders per person to avoid corvée labour. The consequence was a shortage of forced labour in many rubber-producing areas. The colonial government then encouraged the migration of labour from Java to meet these labour demands, particularly in Jambi. Most small rubber cultivators were also able to pay personal and income tax. Although the colonial government continued to increase tax demands, it was still able to reach its revenue target every year of high rubber prices; arrears were usually below one per cent.

The small cultivators were not the only beneficiaries of the cultivation of rubber. This privilege was shared by the traders, hired tappers and the Dutch government. The prosperity of the rubber-producing areas attracted many outsiders to migrate there during the boom period. Dutch officials in Jambi enjoyed high wages and new offices and houses were built for them. In 1931 it was reported that Dutch officials in Jambi had received significant pay increases from the second half of the 1920s, as the Dutch government had obtained a considerable income from the growth of the small rubber sector. But the rubber boom also caused an increase in the cost of living in most rubber-producing areas. For example, the price of rice in the rice-producing centre of Kerinci varied from 8 to 10 guilders per picul, but was 25 guilders or more per picul in Jambi. It was reported that a household in an urban area in Jambi needed at least 3 guilders a day while the cost of living in Banjarmasin were the highest in Indonesia before the Second World War.

The importance of the rubber smallholder sector was also reflected in the tax revenues received by the colonial authorities. There was a considerable increase in tax revenue after the introduction of the 5 per cent export duty on small rubber in June 1925. The total annual income from the export tax received from the export duty on small rubber of Palembang was 927,000 guilders over the last six months of 1925. The colonial government received more than 11 million guilders from the export duty on small rubber in Palembang and Jambi from mid-1925 to 1933, or an average of more than 1.2 million guilders a year. The government obtained about 14 million guilders in Palembang and 10 million guilders in Jambi, from the imposition of the special export duty on smallholder rubber during the two and half years from mid-1934 to the end of 1936. The money collected from the special export duty was used by the colonial government to finance public works and to reduce the tax burden for those people in difficulties. The tax subsidy amounted to nearly 4 million guilders while more than 5 million guilders were spent on infrastructure. The tax subsidy was given in the form of tax reduction, tax exemptions and rubber grants. In fact, there were many complaints from the small cultivators about the distribution of the tax reduction and rubber grant. The remainder of the money was allotted to various projects, such as the construction and improvement of government and military hospitals, private housing, and the provision of sanitation in the Chinese set-

tlements. The money allocated to Indonesian education, however, was far less than that set aside to buy cars for Dutch officials, and there was an insignificant grant for the improvement of local agriculture, livestock and industry. The fund was also used to compensate foreign rubber planters and traders. For example, about 5.8 million guilders were paid to foreign rubber estates in Palembang and Jambi, for their export licences to export smallholder rubber while about 30,000 guilders were used to compensate Chinese and Western traders who had lost by the sudden increase in the export duty. The Dutch airline also benefited from the special export tax levied on smallholder rubber. It was reported in 1941 that the company received a grant to buy three aircrafts while another grant of 65,000 guilders were spent on the airport at Palembang.

The expansion of smallholder rubber cultivation gave rise to land problems for people in some rubber-producing areas. Although there were still large forest areas in most rubber- producing areas until the late 1930s, people in these areas no longer had easy access to suitable land. Access became even more difficult for the local people as the growth of foreign plantations and mines required more land to be explored.

4. Epilogue

The collapse of rubber prices which began in the late 1920s was a turning-point for the smallholder rubber producers in Palembang, Jambi and South Kalimantan as rubber prices were never to recover their earlier level. The market was depressed and demand for luxury goods decreased sharply. However, this does not mean that rubber cultivation was no longer of any benefit to the economy of the local people. Although economic conditions deteriorated during the 1930s, the living standard of the people in most rubber-producing areas was better than that found in other regions. It is true that the surplus was not great enough to increase economic productivity nor to create new economic opportunities outside the rubber sector. Nor was it sufficient to stabilize the rural economy or to initiate sustained economic growth. It only provided prosperity in relative terms. Nevertheless, the great returns earned from rubber during the earlier booms and the quick recovery of rubber prices and production in the late 1930s saved the people from economic misery.

References

Akers, C.E., *The rubber industry in Brazil and the Orient*. London: Methuen, 1914.

Barlow, C. & Muharminto, 'The rubber smallholder economy'. In: *Bulletin of Indonesian Economic Studies*, 18, 2, 1982, 86–119.

Barlow, C. & Muharminto, *Smallholder rubber in South Sumatra; Toward economic improvement*. Bogor: Balai Penelitian Perkebunan, 1982.

Bauer, P.T., *The rubber industry; A study in competition and monopoly*. London: Longmans, 1947.
'Bevolkingsrubbercultuur in het Palembangsche'. In: *Tijdschrift van het Binnenlands Bestuur*, 53, 1917, 522–523.
'Bevolkingsrubber in Sumatra'. In: *Nederlandsch-Indisch Rubber- en Thee-Tijdschrift*, 23, 1924, 441–442.
Blink, H., 'De opkomst en beteekenis van de rubber en getah pertja productie en handel in Nederlandsch Oost-Indië'. In: *Tijdschrift voor Economische Geografie*, 7, 1916, 196–209.
Breda de Haan, J. van, 'Inlandsche rubbercultuur in Djambi'. In: *Tijdschrift van het Binnenlands Bestuur*, 51, 1916, 137–142.
Broersma, R., 'De Indonesiër met zijn rubber'. In: *Koloniaal Tijdschrift*, 15, 1926, 146–165.
Broersma, R., *Palembangsche verkenningen*. Semarang: Locomotief, 1921.
Clemens, A.H.P., 'De inheemse rubbercultuur in Jambi en Palembang tijdens het Interbellum'. In: A.H.P. Clemens & J.Th. Lindblad, eds., *Het belang van de Buitengewesten; Economische expansie en koloniale staatvorming in de Buitengewesten van Nederlands-Indië 1870–1942*. Amsterdam: NEHA, 1989, 213–237.
Clemens, A.H.P., J.Th. Lindblad & L.J. Touwen, *Regional patterns in foreign trade 1911–1940* [= *Changing Economy in Indonesia*, vol. –12b]. Amsterdam: Royal Tropical Institute, 1992.
Cumming, T.J., *Report on a visit to the residency of Djambi*. Kuala Lumpur: Federa ted Malay States Government Press, 1924.
Departement van Landbouw, Nijverheid en Handel, *De volksrubbercultuur in Nederlandsch-Indië*. Batavia: Kolff, 1924.
Departement van Landbouw, Nijverheid en Handel, *Perkeboenan karet boemi poetera*. Weltevreden: Landsdrukkerij, 1926.
'De rubberhandel in Palembang'. In: *Algemeen Landbouwkundig Weekblad voor Nederlandsch-Indië*, 13, 1929, 747.
'Djambi rijkdommen'. In: *Indische Gids*, 46, 1924, 69–70.
'Emigratie naar Djambi'. In: *Indische Gids*, 34, 1, 1912, 305.
Gelder, A. van, 'Bevolkingsrubbercultuur'. In: C.J.J. van Hall & C. de Koppel, eds., *De landbouw in de Indische archipel*. The Hague: Van Hoeve, III, 1950, 427–476.
Haccoû, J.F., 'De structuur van de bevolkingsrubbercultuur in Nederlandsch-Indië'. In: *Economisch-Statistische Berichten*, 17, 1932, 993–996.
Knappert, S.C., 'Bevolkingsrubbercultuur in Nederlandsch-Indië'. In: *Economisch Statistische Berichten*, 12, 1927, 810–813.
Koloniaal Verslag. The Hague: Algemene Landsdrukkerij, 1890–1902.
Lindblad, J.Th., *Between Dayak and Dutch; The economic history of Souteast Kalimantan, 1880–1942*. Dordrecht/Providence: Foris, 1988.
Luytjes, A., *De bevolkingsrubbercultuur in Nederlandsch-Indië; Zuider- en Oosterafdeeling van Borneo*. Weltevreden: Landsdrukkerij, 1925.
Ozinga, J., *De economische ontwikkeling der Westerafdeeling van Borneo en de bevolkingsrubbercultuur*. Wageningen: Zomer & Keuning, 1940.

Purwanto, Bambang, *From dusun to the market; Native rubber cultivation in southern Sumatra, 1890–1940.* Ph.D thesis, University of London, 1992.
Setten, D.J.G. van, 'De bevolkingsrubbercultuur in Palembang'. In: *Nederlandsch-Indisch Rubber Tijdschrift*, 2, 1917, 211–213.
Smits, M.B., 'De invloed van de inlandsche rubbercultuur op de welvaart van de bevolking'. In: *Landbouw*, 2, 1926/27, 903–905.
Spoon, W., *De Nederlandsch-Indische bevolkingsrubber en herbereidingsindustrie.* Amsterdam: De Bussy, 1933.
Sukma, Sukria *et al.*, *Beberapa faktor terjadinya areal tidur karet rakyat propinsi Djambi.* Yogyakarta, 1970.
Tergast, G.C.W.C., 'Bevolkingsrubbercultuur en coöperatie'. In: *Landbouw*, 6, 1930/31, 929–934.
Tideman, J., *Djambi.* Amsterdam: De Bussy, 1938.
Touwen, L.J., 'Voordeel van veelzijdigheid; De economische ontwikkeling van Palembang en Djambi tussen 1900 en 1940'. In: *Economisch- en Sociaal-Historisch Jaarboek*, 54, 1991, 134–182.
Warren, C.N. & B. van Staalduinen, *De bevolkingsrubbercultuur in Nederlands-Indië; Palembang.* Weltevreden: Landsdrukkerij, 1925.
Wellan, J.W.J., *Zuid-Sumatra; Economisch overzicht van de gewesten Djambi, Palembang, de Lampoengsche Districten en Benkoelen.* Wageningen: Veenman, 1932.