Rights of rubber farmers in Thailand under free trade

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1. Introduction

This article examines whether rubber farmers in Thailand are going to have a bright future, in terms of their economic, social, environmental and health context. the price of rubber on the international market has been consistently high since 2006 which seems very promising.
A deeper comparative study of the local and central market bidding processes; export and processed product prices; the expansion of plantation areas in the Mekong Sub-region countries and global needs of importing countries under a free trade regime shows that future prices of rubber are liable to plummet down. Production, trading, processing and export mechanisms and numerous groups play an active role in determining the rubber prices. These are significant variables within a free trade economy, which will implicitly undermine the rights of the rubber farmers.

The author's definition of a "rubber farmer" does not depend on the quantity of land occupation, but focuses on various factors of production. Thus for the purposes of this paper a "small scale rubber farmer" is:

1) Someone with a land right - legal and illegal -of a small-scale rubber farmer—to plant rubber trees in the forest or the state's land without any land title deed;
2) Who uses his or her own labour in growing, managing and tapping the rubber trees though may also hire other waged workers;
3) Who is a producer of rubber latex and sheets; and
4) But who is not involved in high technology rubber processing or exporting.

Two government agencies have been the driving forces for commercial rubber tree plantations in Thailand. The Office of Rubber Replanting Aid Fund (ORRAF), under the Ministry of Agriculture has supported farmers to grow rubber under strict technical guidelines based on intensive monoculture, and the Royal Forestry Department, under the Ministry of Natural Resources and Environment has granted private companies and the Forestry Industry Organization (FIO) concession rights to use degraded forest land in the National Forest Reserves.

Rubber plantations have changed the country's land use patterns has affected the country's land use and visibly destroyed its forest cover. Rubber plantations can be seen all over the south of Thailand, from the highland areas down to the low lying plains and since the latest government promotion project in 2004-2006 cloned seedlings have begun sprouting in almost every province of the country, replacing short-term cash crops. The future development of the rubber plantations will have important implications for the economic security of hundreds of thousands of rubber farming households, their land rights, food security and the protection of natural resources and tropical eco-systems.

2. Structural relationship of rubber plantation

Rubber trees were first planted in Thailand in 1899 by Phraya Ratsadanupradit, Trang's provincial governor. He brought the plant from Malaya and initially planted it in Kan Tang district of Trang province. Rubber breeding and plantations were later promoted in the southern and eastern regions of the country (in 1911) and further spread into the northeastern region (in 1978). In 1961, the government set up the Office of Rubber Replanting Aid Fund as a legal entity to promote rubber planting in Thailand. Since then, rubber plantation areas have spread far and wide.

In 1990, the rubber plantation area totaled 10,986,660 rai (about 1.76 million hectares) while the total area in 2003 amounted to 12,618,792 rai (about 2.1 million ha). The plantation area in the northeastern region increased from 193,533 rai (about 30,965 ha) in 1990 to 590,313 rai (about 94,450 ha) in 2003 (see **Table 1**).

Table 1: Rubber plantation area in Thailand

Unit: Rai

Province	1990	1996	2003
1. Prachuab Khiri Khan	**5,563**	**28,190**	**41,175**
2. Chumphon	**188,942**	**318,709**	**400,579**
3. Ranong	**75,804**	**79,935**	**106,693**
4. Surat Thani	**1,325,183**	**1,662,643**	**1,754,996**
5. Nakhon Si Thammarat	**1,466,229**	**146,104**	**639,345**
6. Phang-nga	**485,464**	**617,817**	**639,345**
7. Phuket	**110,634**	**108,302**	**109,965**
8. Krabi	**507,078**	**621,997**	**586,302**
9. Trang	**1,061,592**	**1,059,294**	**1,290,757**
10. Phatthalung	**556,740**	**513,369**	**511,941**
11. Songkhla	**1,650,244**	**1,650,178**	**1,387,861**
12. Satun	**256,058**	**281,290**	**266,452**
13. Yala	**907,545**	**945,105**	**1,021,284**
14. Pattani	**245,689**	**271,153**	**278,434**
15. Narathiwas	**870,973**	**890,127**	**980,180**
16. Chon Buri	**23,143**	**121,274**	**135,133**
17. Chachoengsao	**8,181**	**16,597**	**76,929**
18. Rayong	**606,696**	**639,790**	**560,402**
19. Chanthaburi	**263,237**	**527,569**	**329,240**
20. Trad	**183,126**	**198,035**	**197,985**
21. Sa Kaeo	-	**4,180**	**10,070**
22. Northeast (19 provinces)	**193,533**	**400,780***	**590,313**
Total	**10,986,660**	**12,562,438**	**12,618,792**

(1 rai/6.25 hectares)

Source: http://www.rubberthai.com/
* This figure is for the rubber plantation area in the Northeast in 2001. Note that provinces listed 1-15 are in the south, while 16-21 are in the Eastern region.

Clearly, the establishment of ORRAF played an important role in expanding the country's rubber market share to the extent that Thailand became the world's biggest exporter of natural rubber in 1991 overtaking Malaysia, Indonesia and the South and Latin American countries. (see **Table 2**).

Table 2: Natural rubber exports by Thailand, Malaysia and Indonesia

Unit: 1,000 Tons

Year	Thailand	Malaysia	Indonesia
1988	**906.4**	**1,563.6**	**1,132.0**
1989	**1,100.6**	**1,364.8**	**1,151.8**
1990	**1,150.8**	**1,185.6**	**1,077.3**
1991	**1,231.9**	**1,041.2**	**1,220.0**
1992	**1,412.9**	**939.1**	**1,268.1**
1993	**1,396.8**	**769.8**	**1,214.3**
1994	**1,605.0**	**782.1**	**1,244.8**
1995	**1,635.5**	**777.5**	**1,323.8**
1996	**1,763.0**	**709.7**	**1,434.3**
1997	**1,837.1**	**586.8**	**1,403.8**
1998	**1,839.4**	**424.9**	**1,641.2**
1999	**1,886.3**	**435.5**	**1,494.6**
2000	**2,166.2**	**196.4**	**1,379.6**
2001	**2,042.1**	**162.1**	**1,496.9**
2002	**2,354.4**	**430.0**	**1,502.2**
2003	**2,573.4**	**509.7**	**1,660.5**
2004	**2,637.1**	**679.9**	**1,875.1**
2005	**2,632.4**	**666.0**	**2,025.0**
2006	**2,771.7**	**612.6**	**2,287.0**
2007 January	**223.7**	**50.9**	**180.0**
2007 February	**223.7**	**31.6**	**200.0**

Source: http://www.rubberthai.com/

Table 3: Government and private sector organizations involved in the promotion of rubber plantation, breeding and marketing

Organizations	Year of establishment	Roles	Legal authorization
Rubber Research Institute: Currently under the Department of Agriculture; three additional research centers were set up in Chachoengsao, Surat Thani and Songkhla provinces.	1934	Supervises rubber production and export according to international agreements; documents nationwide rubber plantation registration; experiments and studies on rubber species; establishes rubber plantation stations; promotes the plantation of good quality rubber varieties; controls rubber breeding; examines rubber product qualities; enhances the quality of latex processing; and processes latex into rubber products	Rubber Control Act B.E. 2477 (1934) as amended by the Rubber Control Acts B.E. 2479 (1936) and B.E. 2481 (1938)
Rubber Plantation Organization: A state enterprise run by the Ministry of Agriculture	1949	Operates rubber plantations; establishes rubber replanting and breeding nurseries; produces different types of rubber products and components; invents or produces rubber materials; and operates commercial and business transactions for rubber produce, goods and other supplementary income	Royal Decree on the Establishment of the Rubber Plantation Organization B.E. 2504 (1961), as legal amendments made in 1949
Office of Rubber Replanting Aid Fund and establishing the Rubber Plantation Organization as a state enterprise run by the Ministry of Agriculture	1960	Promotes the plantation of good quality rubber varieties by granting financial aid and technical advice; develops product quality to meet market standards; develops market mechanisms and systems; establishes and develops organizations of rubber farmers by helping them organize their rubber fund co-operatives; and organizes local rubber bidding markets	Rubber Plantation Aid Fund B.E. 2503 (1960)

The organizations referred to above in table 3 above played very active role in the rubber movement, there are other similarly important agencies, as follows:

(1) Eight organizations of rubber farmers and rubber processing operators, including:

1.1 Thai Rubber Association, established by the cooperation of rubber producers and traders in 1951, its headquarters is located in Songkhla's Hat Yai district;

1.2 The Association of Thai Rubber Latex Producers and Exporters, established on 28 January 1988, based in Songkhla's Sadao district;

1.3 Thai Furniture Industry Association, established on 17 March 1980, based in Bangkok;

1.4 Rubber Product Industrial Group, located at Sirikit National Conference Center in Bangkok;

1.5 Rubber Glove Producers Association of Thailand, based in Bangkok;

1.6 Association of Rubber Farmer Co-operatives of Thailand, based in Rayong;

1.7 Association of Thai Rubber Wood Trading, based in Songkhla's Hat Yai district; and

1.8 Union of Rubber Farmer Co-operatives of Thailand, based in Songkhla.

(2) Nine international organizations of which Thailand is a member:

2.1 **Association of Natural Rubber Producing Countries (ANRPC)**, established in 1969, with nine member countries;

2.2 **International Rubber Research and Development Board (IRRDB)**, established in 2001, based in Malaysia with 16 member countries;

2.3 **International Rubber Study Group (ISRG)**, established in 1947;

2.4 **International Rubber Quality and Packing Conference (IRQPC)**, based at Kuala Lumpur;

2.5 **International Rubber Association (IRA)**, established in 1969;

2.6 **International Organization for Standardization (ISO)**, joined by 37 member organizations from 26 countries;

2.7 **International Tripartite Rubber Council (ITRC)**, set up on 12 December 2001 by Thailand, Malaysia and Indonesia;

2.8 **International Rubber Consortium Limited (IRCo)**, set up to address with the lowering of rubber prices during 1995-2001, based at the office of the Rubber Research Institute; and

2.9 **International Natural Rubber Organization (INRO)**, established as a result of the UN Conference on Trade and Development (UNCTAD) held in 1976 to address the decreases of commodity prices and **INRO** was set up in 1980; its market interventions during 1998-1999 failed because of the lack of cooperation from its members in contributing to the buffer stock, resulting in the global rubber price being lower than the minimum guarantee price. Moreover, the rubber market was then more favourable to user countries than to producing countries. Such was an important factor prompting member countries of INRO to withdraw their membership. Finally, the organization's meeting decided to disband itself on 13 October 1999.

Government policies' role in promoting rubber as an essential cash crop in the souther development strategy

Implementation years	Master plan/policies
1899-1932	**Rubber plantation promotion among the public and civil servants** Rubber seedlings or seeds were given to low-income people to encourage them to earn their living by planting rubber trees. Also, suitable zone for rubber plantation was designated. Measures relevant to legal aspects, taxation and labour exemption were applied to those taking up rubber plantation. Export and sales taxes would be waived for rubber planters while foreign workers could be hired to work in the rubber plantation and production activities.
1910-1990	**Promotion of rubber plantation among local Chinese investors to prevent British capital invasion** The Thai government aimed at using overseas Chinese capital to prevent the British capital from exploiting the areas flanking the southern railway line. Hat Yai junction area adjacent to the Malayan border was of particular importance because Britain appeared to expand its political and economic influence into the southern part of Thailand. About fifty thousand rai (8,000 hectares) of rubber plantations were established on border areas between Hat Yai and Khlong Ngae districts and between Malaya's Padang Besar subdistrict and Songkhla's Sadao district. Moreover, the Thai government issued its instruction to the lord lieutenants of the southern administrative units to allow those Chinese investors, who did not claim to be subjects of western authorities, to stake claims to rubber plantation plots of not more than 100 rai (40 acres) per person. The authority was obliged to issue a permit within one day. If the any Chinese merchants wanted to establish the rubber plantations covering more than 500 rai (200 acres), they had to submit their applications to the district officers of each location.
1917-1943	**Agreements made during the colonial period to control rubber production and markets** ***Stevenson's Agreement:*** The rubber prices in the global markets drastically plummeted during the economic recession between 1920 and 1921. Then the **Stevenson's Agreement** was made to enable rubber producers, especially those under the British and Dutch colonies, to limit and control their own production. At the time, Britain and the Netherlands were big colonial powers, owning and representing over 72% and 25% of the world's natural rubber producers. This resulted in the control of rubber trading markets in Britain and the Netherlands. Simultaneously, most of the capital used for rubber trading in Thailand depended on investment credits from Singapore or Penang, which had been brokers for the British and Dutch owners of rubber plantations and automobile manufacturing companies in the US. On the other hand, the Tan Kah Kee capital group collaborated with the American capital to gain its bargaining power and compete with the British and Dutch capital. Consequently, the global prices of rubber were unstable. During the worldwide economic recession in 1920, the rubber prices in the world markets went down from US$0.26 per pound to around US$0.03 per pound in 1929. Finally, the rubber producers from around the world, including Thailand, decided to lay down the

	International Rubber Regulation Agreement (IRRA). As a result, Thailand was obliged to limit its annual export of rubber to not more than 15,000 tons. In addition, Thailand had to promulgate a number of relevant acts and issue rubber-trading coupons for the first in the country. ***International Agreement on Rubber Supply Restriction:*** This international accord restricted the rubber exports of the IRRA's members between 1934 and 1944. Thailand was allowed to annually export 15,000 tons of rubber to the world markets whereas its yearly production amounted to over 40,000 tons and the domestic industry was not capable of consuming that much of rubber. So, the rubber traders that belonged to the Tan Kah Kee networks attempted to release their surplus by producing fake coupons or resorting to illegal trading in the world markets. After the outbreak of World War II in 1939, the IRRA's members such as Thailand, Indonesia, and Malaysia, could not comply with the agreement. There were some countries, such as Britain, India and the Netherlands, that could continue following the agreement's restriction until it expired in 1944.
1961-2002	**First-Eighth Economic and Social Development Plans** The Thai governments were in favour of the promotion and development of rubber production, as well as rubber processing for exports. A wide range of measures—production, commercial, financial, and research and development--were implemented throughout the past eight development plans to promote rubber plantation.
2002-2008	**Comprehensive Rubber Development Plans:** This consists of nine plans, which start from enhancing the productivity of the rubber farmers, development of domestic rubber markets, latex industrial development, rubber wood processing, strengthening business capacity of rubber farmers' institutes, and rubber industry development. Important development plans include: 1) Announcement of the Ministry of Agriculture dated 30 June 2003 and Additional Announcement of the Ministry dated 10 November 2003, requiring the Department of Agriculture to designate areas suitable for rubber plantation. The designation was to focus mainly on agricultural zoning and productivity. The total target areas amounted to one million rai (160,000 hectare): 700,000 rai or 112,000 hectares in 17 provinces in the Northeast (Buri Ram, Mukdahan, Loei, Nakhon Phanom, Sakon Nakhon, Nong Khai, Udon Thani, Ubon Ratchathani, Amnat Charoen, Si Sa Ket, Kalasin, Surin and Yasothon) and 300,000 rai or 48,000 hectares in 17 provinces in the North (Kamphaeng Phetch, Chiang Rai, Chiang Mai, Tak, Nakhon Sawan, Nan, Phayao, Phichit, Phitsanulok, Phetchabun, Phrae, Mae Hong Son, Lampang, Lamphun, Sokhothai, Uttaradit, and Uthai Thani. 2) Rubber Market Development Plan (2004-2005); 3) Three-year strategic restructure of rubber and rubber products (2006-2008); 4) Policy on promoting Thailand as the world's rubber center, such as that incorporated in the Songkhla-Satun provincial cluster strategies; 5) ASEAN Free Trade Agreement (AFTA), which required Thailand to reduce its import tariffs for ASEAN countries to

	5% in 2000. The import tariffs or rubber had to be reduced to 20% in 1997; 15% in 1998; 10% in 1999 and 5% in 2000. 6) An agreement made with China: China joined the WTO in 2001, resulting in the reduction of many of their tariffs required by the WTO, including rubber. Thailand hugely benefited from the increased quota of rubber import given to China and the cancellation of import quota in 2004 because China generally imported rubber more than its given quota while Thailand's biggest export market of rubber was China. 7) ASEAN-China Free Trade Agreement: This means that China will impose its tariff rate on Thailand and other ASEAN nations at 0% and vice versa. Besides, those non-tariff barriers will eventually be gone until there is completely free trade between the ASEAN countries and China. The establishment of the ASEAN-China Free Trade Area has seriously affected Thailand because it benefits China's rubber products. Although China imports more rubber from Thailand since it is cheaper, Thailand imports rubber products from China, which imports less natural rubber from Thailand. Further more, China reserved rubber as a sensitive product to be charged with 20% tariff until 2009 before gradually reducing its tariff rate to protect the rubber farmers in China.
2004-2010	**Populist Rubber Plantation Project** The project has been operated by the Department of Agriculture, Rubber Plantation Organization, Office of Rubber Replanting Aid Fund (ORRIF), Ministry of Agriculture, Ministry of Natural Resources and Environment, financial institutes and Industrial Federation Council of Thailand. It aims at enabling the rubber farmers to take out loans from financial institutes to increase their income and add value to their produce. The farmers will be granted documents (*kor yor tor 1*) verifying use of the rubber plantation land located in the National Forest Reserves in 17 provinces and their rubber wood value. The documents can be used as collateral to take out their loan. In addition, the ORRIF will also give 7,300 baht to each rubber farmer as a welfare fund. **Target groups and areas:** 422,385 farmers in 17 provinces--covering 5,547,931 rai (about 887,669 hectares)—can have access to capital. Of the total number of farmers, 43,225 of them will plant rubber trees in 1,002,931 rai of land in the National Forest Reserves and 379,160 of them will be owners of the synthetic rubber plantations in 17 provinces, with rubber trees already planted for more than 15 years in 4, 545,831 rai of land. The impact has been widespread encroachments of forest areas and the villagers' farmland was encroached upon by the authority's designation of National Forest Reserves. As a result, each family had only 30 rai of land left and had to pay rent for the land it occupied. The farmers participated in the project got lower prices for their rubber wood than what the markets paid and some of them were discriminated against by some officials, thus the farmers who wanted to join the project could not do so.

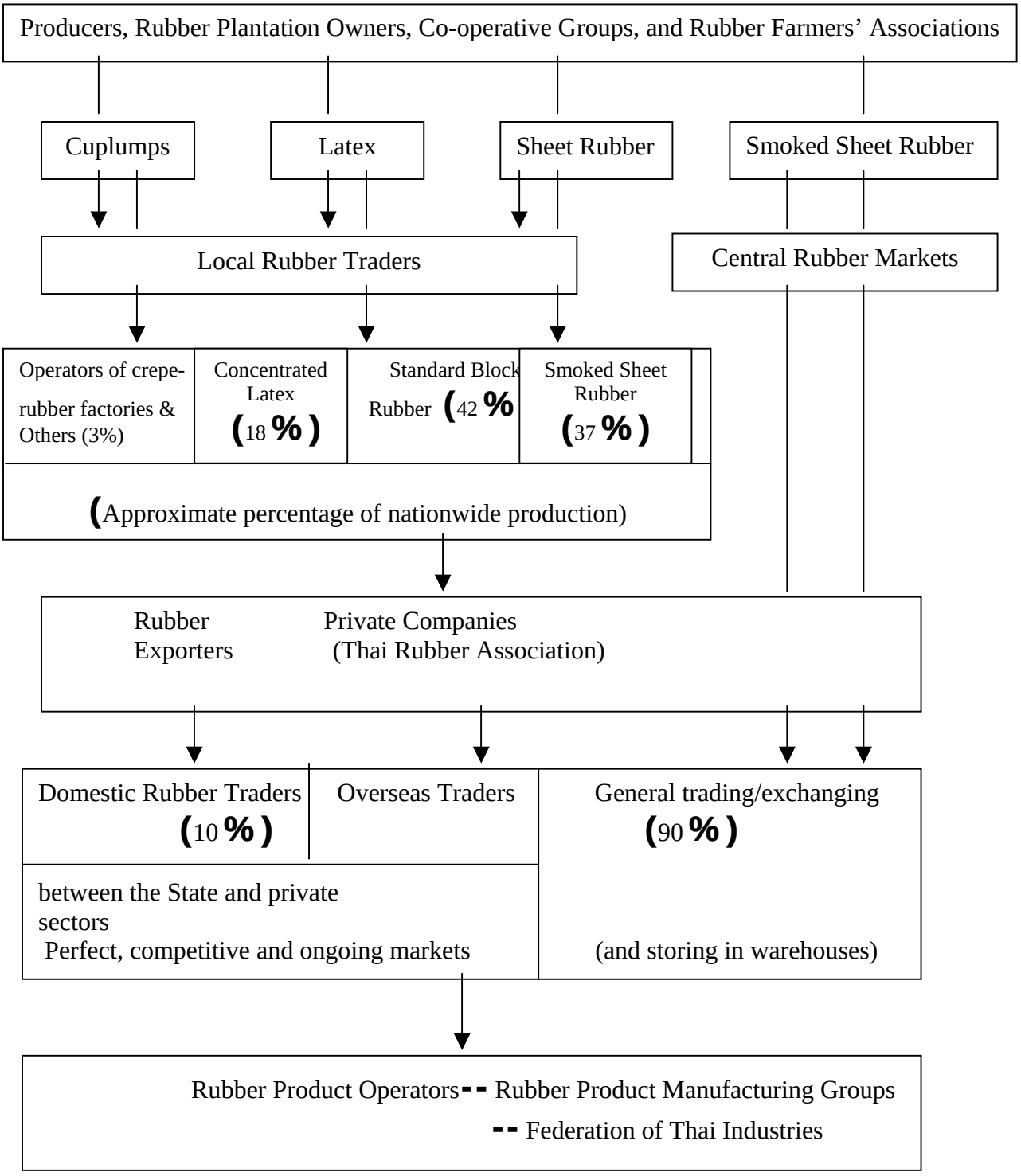
In short, such development plans and policies have greatly increased rubber plantation areas in Thailand. The production process and development of rubber processing have been influenced by the free trade rules since the colonial era and the opening of the country to adopt a capitalist economic system and incorporate it into the national development plans. The market mechanisms and prices of rubber have been allowed to depend on global markets. Countries and international organizations have put pressure on the Thai state to manage and control rubber prices. Government interventions were undertaken occasionally to regulate rubber prices. During the Chuan Leekpai and Gen Chavalit Yongchaiyudh administrations, six government interventions were undertaken to regulate the prices of 1.3 million tons of rubber, using 25,394 million baht. Such interventions brought a loss of 6,267 million baht to the governments. This loss was caused mainly by the ministers' corruption, such as collusion with rubber traders, hoards, embezzlement and price dumping. Take the signing of over 50 rubber sales contracts for example. Several of them did not result in actual delivery of rubber (during 1993-1994). A rubber warehouse at Hat Yai was burnt down to get rid of the evidence of the "bogus stocks" of rubber, which was supposed to amount to 5,000 tons and would take about three months to be completely burned (www.manager.co.th).

Moreover, the governments also laid down laws to control rubber prices, plantation zoning, and rubber varieties, which would not allow the farmers to develop rubber produce on their own, so that Thailand's rubber production could be competitive in the global markets. But such a structural relationship contributed to the capital groups' monopolized control over the rubber production and markets, thus subjugating the production of the rubber farmers to domestic and foreign markets.

3. Rights of the rubber farmers under the free trade market regime

As rubber can be harvested in a variety of methods, ranging from raw latex, to its processed forms of block, sheet and manufactured products, thus its economic gains attract different groups to get involved in. Rubber therefore generates the major income for rubber farmers, particularly those in the South and increasingly for those in Thailand's other regions and the Mekong Sub-region. What should be noted is which groups economically benefit most from the production and development of rubber for exports. Is the income distribution fair? How do the market mechanisms result in rubber monopoly? It will be shown here if the rubber farmers are and will be fairly treated—in comparison with the whole production process--by the free trade regime's market mechanisms, although they can sell their latex at higher prices.

Table 3: Structure of Domestic Markets of Natural Rubber



1) Structure of Domestic Markets of Natural Rubber in Thailand
Table 3 shows different active groups, as follows:

1.1 Community rubber farmers, which can be divided into four groups: Chinese merchants (*Thao Kae*), plantation owners, small-scale plantation owners and waged workers (*Coolies*). All groups, except the waged workers, are related to each other in a client-patron manner. Besides, these groups have to deal with traders by selling their produce to and take out loans from them. Such inter-dependent relationship is rarely maintained by large-scale rubber plantations owned by companies or powerful capitalists (**Table 4**).

Considering the determinants of rubber production and prices, it clearly shows that rubber farmers are merely product suppliers at the upstream process. They are not entitled to set the rubber prices. In 2007, the rubber farmers' production cost—in the case that no waged workers are needed and exclusive of land price--of raw sheet rubber and latex is around 35 baht per one kilogram while the prices of sheet rubber and latex range between 50 baht and 100 baht per kilogram. This somehow brings high income to the rubber farmers. But the prices differ according to different locations of the central rubber markets located in each province. For instance, at Songkhla's Hat Yai market, the price of raw sheet rubber is only 47.138 baht per kilogram whereas the local price is 73.05 baht per kilogram. But the bidding price is 74.67 baht per kilogram (**Table 5**).

However, the household expenses of rubber farmers engaged in rubber plantation monoculture have highly increased because community food plants and animals have drastically decreased, in contrast to the rising cost of living. Moreover, the rubber prices are ranging in accordance with the consumption demands of the user countries and productive quantity of the producing countries. It cannot be ensured that the prices will be high forever. And the rubber production cost tends to increase. So are the wages of hired rubber tappers, who will get their share of income between 30% and 50% according to the locations.

1.2 Rubber traders: there are three levels (Kittima Heebkaew, 2001), as follows:

1) **Community traders**, consisting of itinerant vendors, village traders and agricultural co-operatives;
2) **Local traders**, such as town traders, locally known as middlemen (*Yi Pua*) who are bigger buyers of rubber from the plantations, itinerant vendors**,** community and town traders, or sometimes get involved in making bids to groups; and
3) **Processors or exporters are the country's highest level of traders,** often with their own processing factories and will buy smoked sheet rubber or concentrated latex from town traders or large-scale rubber farmers.

Some rubber farmers who can produce a larger amount of rubber or can organize themselves will not sell their product to the middlemen. They will sell directly to the central rubber markets so that they get higher prices. Then the rubber exporters will sell the produce to the world's central markets in Singapore, Japan and the US, which will then sell the rubber to consumer countries.

Table 4: Relationship of Community Rubber Farmers

Class	Land	Labour	Cash	Sale of Products
A. Chinese merchants	-Own a lot of land; and - Have adequate income to re-invest to add value to their products.	-Employ those in categories C and D	- Provide credits and loans to those in categories C and D	- Sell their products through E - Some of them can invest in product processing and selling by themselves
B.Rubber plantation owners	-Own a lot of land but not as much as A; and - Have adequate income to re-invest to add value to their products but not as much as A.	- Rely on household labour		- Sell their products through E
C.Small-scale rubber plantation owners	--Own a small plot of land; and - Some annual income is not enough to re-invest to add value to their products.	- Rely on household labour and are hired by A.	- Take out loans from A and E	- Sell their products through E
D.Waged workers	- Landless	-Hired by A	- Depend on loans from A and E	- Sell their products through E
E. Traders	- Own land but principal income does not come from rubber plantations	- Rely on household labour and hire C and E as workers	- Provide credits and loans to C and E	- Act as middlemen re-selling products

Source: Supakarn Nanthaworakarn, 2001

Table 5: Quantities and Prices of Rubber Traded at the Central Rubber Markets

On 19 October 2007

Detail	Central Rubber Markets		
	Hat Yai	Surat Thani	Nakhon Si Thammarat
Market entrance of rubber quantities (kg) at 2.30 pm	47,138*	38,000*	27,000*
Bidding prices (Baht/kg)	74.67	74.79	74.90
Local prices (Baht/kg)	73.05	73.15	72.40
Rubber value (Baht)	3,519,794	2,842,020	2,022,300
Value added (Baht)	76,364	62,320	67,500

Remark: Morning/Afternoon rounds

*** Estimated weights**

Source: http://www.rubberthai.com/price/price_index.htm

1.3 Rubber capital groups

Thailand's production and sale of rubber have been controlled by foreigners. At the beginning, the British colonial power controlled the rubber production and markets by not allowing the sale of rubber seeds to non-colonial countries. The then government of Siam had to order the Ministry of Foreign Affairs to negotiate to buy the rubber seeds. Moreover, the country's export of rubber was restricted by quota system. Singapore's **Tan Kah Kee** capital group—known among Thai people as "**Tek Bee Hang**"—with support from the US however, illegally traded rubber beyond quotas. Also, the government at the time wanted to support the Chinese that were not British subjects to plant rubber in the country. The Singaporean and Malayan capital has played its active role in controlling Thailand's rubber markets ever since.

Until 1997, Thailand's export of rubber has been monopolized by a few export companies: Tek Bee Hang Group, or the Yang Thai Pak Tai Company Limited and its subsidiaries. But now the Tek Bee Hang Group has scaled down its business operation because of long-term losses since 1987. Between 1991 and 2000, the company lost about one billion baht, partly because it could not manage to adapt itself to the government policy on rubber price intervention. Although the Tek Bee Hang Group is no longer

monopolizing Thailand's rubber markets, foreign companies or joint ventures are still in control. Some important rubber exporters include the following:

1) Wong Bundit Company Limited

This was Thailand's biggest exporter of rubber during 2002-2006. The company was the second biggest rubber exporter in 2001 and listed as the country's 59th top earner in 2005. It was established in 1987 by Lee Eng Hong, whose Thai name was Taweesak Kerdwongbundit.

2) Sri Trang Agro Industry Company Limited (PLC)

Second biggest rubber exporter of Thailand during 2002-2006, the company was the third biggest export in 2001 and maintains comprehensive rubber businesses in many countries, such as Thailand, China, the US, Singapore and Indonesia. Such businesses include rubber processing factories production of smoked sheet rubber, block rubber, concentrated latex, a wide range of rubber products, as well as jointly investing with Austria, Japan and China to act as a rubber broker. In 2005, the company was listed a Thailand's 39th highest-earning public limited company.

3) Thai Hua Yang Para Company Limited (PLC)

Another capital group engaging in comprehensive rubber businesses, it has rubber plantations in Thailand and Laos. Its affiliate (Sun Thai Rubber Gloves Industry PLC) operates rubber processing factories and runs a tyre manufacturing factory that is a joint venture with China (Shanghai Tyre Company Limited). Thai Hua Yang Para also exports rubber, ranked as Thailand's third biggest exporter during 2002 and 2006. In 2001, the company was ranked fifth among the country's top exporters of rubber and listed in 2005 as Thailand's 47th highest-earning public limited company.

Table 6: 15 Top Rubber Exporters of Thailand (2005-2006)

No	2005		2006 (1-2 Quarters)	
	Company	Quantity (Tons)	Company	Quantity (Tons)
1	Wong Bundit Company Limited	401,543.38	Wong Bundit Company Limited	195,300.89
2	Sri Trang Agro-Industry PLC	244,077.46	Sri Trang Agro-Industry PLC	112,196.81
3	Thai Hua Yang Para PLC	198,874.67	Thai Hua Yang Para PLC	93,162.08
4	Bridgestone Natural Rubber (Thailand) Co., Ltd.	183,594.60	Bridgestone Natural Rubber (Thailand) Co., Ltd.	80,978.94
5	South Land Resource Co., Ltd.	131,622.85	South Land Resource Co., Ltd.	62,478.39
6	South Land Rubber Co., Ltd.	119,187.70	Kwang Koen Rubber Co., Ltd.	57,843.57
7	B. Right Rubber Co., Ltd.	115,617.61	South Land Rubber Co., Ltd.	50,856.20
8	Thai Tech Rubber Corporation Co., Ltd.	92,319.92	B. Right Rubber Co., Ltd.	49,849.26

9	Siam Indo Rubber Co., Ltd.	70,301.77	Thai Tech Rubber Corporation Co., Ltd.	47,942.58
10	Hat Sin Latex Co., Ltd.	60,850.44	Yang Thai Pak Tai Co., Ltd.	27,691.86
11	Yang Thai Pak Tai Co., Ltd.	48,421.51	Taworn Rubber Industry (1982) Co., Ltd.	25,768.16
12	Unimac Rubber . Co., Ltd.	39,277.42	Siam Indo Rubber Co., Ltd.	22,972.88
13	Mitr Thai Holding Co., Ltd.	33,728.41	Thong Thai Rubber Co., Ltd.	21,363.32
14	Hat Sin Latex Co., Ltd.	32,649.01	Mitr Thai Holding Co., Ltd.	18,251.35
15	Tong Thai Rubber Co., Ltd.	31,947.37	Saeng Thong Rubber	17,483.74
Total		1,804,009.12	Total	884,140.04
Nationwide		2,221,583.52	Nationwide	1,294,836.36

Source: Adapted from the Rubber Research Institute's figures

2) Determining Factors of Rubber Production and Prices

The production and prices of rubber are determined by the following factors:

1) ***Nature of rubber****:* Rubber prices fluctuate in accordance with the seasons. During the highly-yielding tapping months between October and January, the prices of all types of rubber will decrease because a lot of rubber is available n the markets. In the dry season between March and April when the tapping is low, the rubber prices will rise. Between May and August, the tapping yields will go up a bit, but the prices continue to decrease for a while. Particularly in the provinces with heavy rainfall, such as Ranong and Chumphon, the tapping yields will be low.

2) ***Market demands for raw materials***: Sometimes when demands for rubber went down because of the economic recession in 1980 or the need to compete with higher demands for synthetic rubber in 1993, rubber prices could fluctuate. But when there was an oil crisis, the demands for rubber went higher to fulfill the market needs of such industries as:

- Raw rubber industry: Producing rubber gloves and condoms, made from concentrated latex, during the HIV/AIDS epidemic period (1985-1987);
- Rubber wood industry: The ban on nationwide logging concessions in 1989 resulted in shortages of hardwood in the country, prompting the wood manufacturers to try to add value to the rubber wood. Thus, the rubber wood industry could generate an annual income of at least 10,000 million baht to Thailand in 1996.
- Rubber products industry, tyre manufacturing and other rubber-processing industry: The capital groups have invested in the research and development of rubber processing and inventing a wide range of new products. Its cooperation with academic institutes has been supported by the governments.

3) ***Political and economic situations of the producing and consumer countries***

Before the collapse of the Soviet Union, wars were a principal determinant of rubber production and prices, as rubber had been used in the production of war material and armaments. Sometimes, rubber was hoarded, resulting in its high prices. But when the rubber stocks were sufficiently high or when the rubber stocks were released after the

end of the war, the rubber price crisis would recur. *After the collapse of the Soviet Union, the free trade driven industrial growth has become a significant determinant of the rubber demands and prices.* In 1993, the rubber prices tended to rise, but the economic recession took place in the consumer countries in 1996. Such incident seriously affected the rubber demands and in turn brought o the economic recession to the rubber-producing nations. A rubber crisis lasted from 1996 to 2001, before the world's consumption of rubber began to increase in 2001 and brought about a golden age of rubber.

4) ***Demands for synthetic rubber***

When the oil prices are high, the production costs and prices of synthetic rubber will high too, resulting in higher consumption of natural rubber by many countries. Nevertheless, when the rubber prices get too high, then the manufacturers have to turn to use more synthetic rubber. Consequently, the rubber prices must come down.

5) ***Global rubber stocks***

If the rubber stocks are too high, countries will release their outstanding quantities to manufacturing companies and buy less rubber of the current year. This will in effect lower the rubber prices. And if this surplus supply lasts for a long time, the producing countries will push for the lower production of rubber.

6) ***Speculation in the futures markets***

The highly influential futures markets are those of Japan and Singapore. Japan's markets (at Tokyo and Kobe) are 90% speculative transactions while the remaining 10% business is traded by importers and middlemen. Most of the traded rubber is the third-grade smoked sheet rubber from Thailand. Thus, Japan's markets play a very influential role in Thailand's rubber trading. Singapore's markets are old ones and the hub of transport, finance, banking and other businesses. Moreover, they are next to Southeast Asia's most important rubber-producing sources: Thailand, Malaysia and Indonesia. These three countries produce around 70% of the global production of rubber. Eighty percent of the trading in Singapore markets involves futures contracts whereas the rest is actual delivery

3) Traders' Determining Factors of Rubber Prices are, as follows:

1. Prices of raw sheet rubber

1.1) Prices paid to rubber farmers

The prices of raw sheet rubber are those expected to sell to the higher-level traders, such as rubber smoking plants. These prices are based on those of the third-grade raw sheet rubber prices, deducted by the rubber moisture estimated principally by the thickness of the sheet rubber. In addition, the traders' expenses such as workers' wages, office expenditure, transport expense, interest rates—different according to levels of traders--and expected profits of traders will also be deducted from the basis prices. The replanting aid of 1.4 baht per kilogram will be passed on from the exporters to the traders and further on to the rubber farmers. So, the rubber farmers are often in a disadvantaged position, as the traders always underestimate the rubber quality by overestimating the rubber moisture and brushing aside all fractions of the kilogram (Khatharit Sitthikul, 1997).

1.2) Prices at central rubber markets

Rubber trading at the central rubber market at Hat Yai is done by bidding. The prices bid, by almost all rubber exporters or rubber smoking plants, will be announced as the rubber prices at Hat Yai market. Very few middlemen join in the bidding here.

1.3) Prices at rubber export markets

The price setting of exporters is based on the FOB prices, deducted by export expenses, tariff, replanting aid and border transit charge.

2. Rubber wood prices

The wholesale prices of rubber wood are different according to the sizes of timber. The six-inch-wide timber is more expensive that that of 3-6-inch wide and the 1-3-inch-wide fuel wood. All sizes of rubber wood of the South are cheaper its counterparts of the Eastern region.

3. Rubber product industry

1) Products made from sheet rubber and concentrated latex: Ninety percent of the natural rubber Thailand can produce will be exported to overseas markets. The remaining produce will be turned into the following significant rubber products.

(1) Automobile and motorcycle tyre industry: Achieving the biggest growth rate in ASEAN, important export markets of this industry included Italy, Germany, US, Mexico, and France. Thailand's major competitors were Indonesia and China. Thailand's big manufacturers that co-invested with foreign countries and had the biggest market shares included:

(1.1) Automobile tyre industry, comprising major capital groups such as:

Bridgestone Company Limited: A joint venture between Bridgestone of Japan and Thai investors, the company's productive capacity is 17,200 tyres per day or about six million tyres per annum. Produced under the trademarks of Bridgestone and Firestone, the company's products hold the biggest market share.

Siam Rubber Company Limited and Siam Michelin Company Limited: It is a joint venture between the Siam Cement Group and the French Michelin Company Limited, with the productive capacity of 16,600 tyres per day or about six million tyres per annum. The products are made under the trademarks of Mustang, Siam Tyre and Michelin.

Goodyear (Thailand) Company Limited: This is a joint venture between Goodyear Company Limited of the US and Thai investors, with the productive capacity of 3,100 tyres per day or about 1.1 million tyres per annum.

(1.2) Motorcycle tyre industry: There are two important capital groups, **Innova (Thailand) Company Limited—**a joint venture from Japan that produced motorcycle tyres under the trademark of IRC and **Siam Michelin Company Limited**. These two companies hold all the market shares of motorcycle parts and control almost half of the market shares of the replacement tyres.

(2) Elastic band industry: Thailand has been the world's biggest exporter of elastic bands since 1987, exporting 90% of its total production. Its major export markets are the UK, France, Italy, Germany and the Netherlands.

Most of the elastic bands factories in Thailand are operated by Thai entrepreneurs. The six major plants have over 70% of the total productive capacity. These six companies are: RS Rubber Company Limited, World Rubber Company Limited, Sri Thepthai Karn Yang Company Limited, Flexiband Company Limited, Mahakij Thai Rubber Factory Limited Partnership, and General Rubber Band Company Limited. About 90% of these companies' production is exported.

(3) Rubber glove industry: Malaysia is the biggest exporter of rubber gloves, followed by Thailand, Indonesia, the Philippines and Singapore. The rubber gloves industries of Malaysia and Thailand are more competitive than other countries. Significant export markets include the US, Germany, Britain, Japan, France and Spain. Nevertheless, Thailand

still has to import the rubber gloves used in medical operation from overseas, especially from Malaysia, the US and Japan.

In Thailand, big manufacturers are joint ventures between the Thai investors and overseas capital groups and hold the biggest market shares. These companies include **Siampermed Company Limited** (a joint venture between Sri Trang Agro-Industry PLC and an Austrian firm), **Safeskin Corporation Company Limited, Ansell (Thailand) Company Limited, Mala Intertrade Company Limited, MRI Company Limited and Dr. Boo Company Limited**.

(4) Condom industry: Condom markets are highly competitive. Producers in Malaysia, Indonesia and Thailand can produce the products with almost similar quality, but Thailand's production cost is lower and it is exempted by the US not to pay the 3.75% import tariff. However, Indonesia will be Thailand's potential competitor.

Big condom producers in Thailand are either transnational corporations or joint ventures, controlling as high as 70% of the market shares (excluding Thai Nippon Rubber Industries, whose production is for export). The Thai producers maintain about 20% of the market shares while the remaining 105 is held by condoms imported from overseas. Significant capital groups are London Royal Consumer Products (Thailand) Company Limited, Thai Nippon Rubber Industries Company Limited, Thai Hygiene Products Company Limited, and Suretex Company Limited.

2) Rubber wood products

Seventy percent of the production of rubber wood furniture is for export. Most producers are joint ventures with foreigners, particularly those from Japan. Thailand's important trading partners are Japan, the US and European countries, such as France, Britain, the Netherlands and Germany. Indonesia is Thailand's big competitor**.**

In short, the rubber farmers face numerous problems caused by government policies, market system and their own production, as follows:

1. High taxation: Passed on from the rubber exporters—who are charged with export tariff and replanting aid fees—at progressive rates; the tax was as high as 26% in 1980;
2. Lack of knowledge in business and marketing: Resulting in the farmers' lack of bargaining power to demand for fair rubber prices;
3. Weak organization: Groups of rubber farmers and rubber sales are not strong enough and cannot link up relevant information. In 1992, there were 5,200 such groups, only 16% or 812 of them could work efficiently while over 80% of them or the remaining 4,368 groups were too weak to make any bargaining power with the traders.
4. The production cost is high and fertilizers, rubber varieties and chemicals are lacking.
5. There is a lack of skilled workers, particularly rubber tappers.
6. A lack of economic security: A large number of rubber farmers who operate their rubber plantations on a monoculture basis, depend solely on income from rubber produce. While their household expenses are rising, the community food sources are diminishing. The rubber prices are fluctuating all the time and rubber price crisis often take place, resulting in the rubber farmers lack of economic security.
7. Marketing problems: According to Poonsak Indarayotha's study, Thailand had the following problems.

   1) Domestic markets

   1.1) In terms of rubber prices, it was a buyer's market. There were a lot of rubber farmers while there were a few middlemen, whose buying steps were numerous, resulting in the rubber prices being unreasonably low.

1.2) Thailand's central rubber market at Hat Yai was just a market that raw sheet rubber was traded by bidding. The trading was limited to only members and owners of large-scale rubber plantations with a lot of rubber and own trucks. This central rubber market did not cover all locations and connect with provincial central markets.

1.3) There was no information to link up the central market with those at local levels and community-based bidding markets. Consequently, the rubber farmers were not informed of the rubber and trading updates. Thus, they were exploited by the middlemen.

2) Overseas markets

2.1) It was also a buyer's market, as 80% of the trading is direct sale, with only 4-5 buying countries that played an active role in setting the rubber prices.

2.2) A number of rubber was exported through the Bangkok Port, resulting in higher transport expense.

4)Effects of rubber plantation on the natural resource base, society and health

During 1961-1996, the rubber plantation pattern in Thailand changed from being a **"rubber forest or *suan somrom* (integrated plantation)"** where indigenous plants (Tjir, PB86) were grown in combination with other fruit trees and high-yielding species (RIM623, PB5/51, RRIM600, GT1), as well as rubber monoculture. A vital factor contributing to the promotion of the monoculture of rubber was the government's replanting aid that provided good quality rubber species through the ORRIF. Summarized here are many research studies[*] which had examined the impacts of rubber.

1) **Depletion of Thailand's forest cover:** As Thailand ranks first as the world's biggest rubber producer, with the production capacity of over two million tons per annum, the rubber plantation has spread throughout the country, particularly in the Northeast and South.
2) **Deterioration of the eco-systems:** Being monoculture plantation, the use of chemical pesticides and the lack of other plants destroyed the bio-diversity of the eco-systems and coexistence of flora and fauna. Organic substance in the soil being reduced resulted in the degradation of the soil. With decreasing trees covering the soil, the evaporation of water was affected. Reduced was the level of the underground water. Moreover, some rubber plantations in the South were located on the 40-60 degree slopes, which affected the soil erosion and decreasing production of rubber.
3) **Rubber farmers' health:** A study of the rubber farmers' work culture in Thab Chang subdistric of Songkhla's Na Thawee district by Waewsuda Noo-urai (1999) found that these rubber farmers did not rest adequately. Thus, they were physically weak and had aches and pains because of the movements they had to make according to the different levels of the rubber tree they had to tap and the overload of latex buckets they had to carry. Eating irregularly brought on peptic ulcer disease. Their failing eyesight resulted from the use of inadequate light from kerosene lamps or torches. It was more likely that they would suffer from malaria because they had to work in the rubber forest where poisonous animals, such as Anopheles mosquito, were abundant. In the past, the rubber farmers frequently suffered from this fever. Moreover, a study by Wanwimol Paengprasit et al (1997)

[2] Pairat Chantarachit and Nithiporn Prainoo: 2003; Sompoon Kritlak: 1990; Ayuth Nisspa et al: 1994; Wanit Chamroonkul: 2002; and Nuchnart Kangpissadarn: 2001.

found that the rubber farmers' toes and nails were ruined and their eyes infected because of the use of chemical sprays without proper protection.

4) **Individual rubber farmers' alienation from community and nature:** The culture of integrated plantation of indigenous rubber trees in combination with other fruit trees and food plants just disappeared. Previously, the rubber farmers lived off the rubber forest. They collected vegetables, wild animals, herbs, fuel wood and wood for construction from the forest. Now they have to pay cash to get these things. Money plays an active role in dominating the community's way of life, which is clearly separated from natural forest and rubber forest. In addition, the monoculture plantation farmers have alienated themselves from the community. Each household will concentrate on tapping their rubber to get as much money as they can. As each plantation is located far from each other, their cooperation is, in effect, on the decrease.
5) **Destruction of local wisdom:** By collecting natural produce along with the products gained from partially transforming nature into rubber forest, the communities could live happily. In the past, any decision-making was made by community members. But when the rubber plantation system was introduced, the plantation owners would be led and forced to strictly comply with the requirements of the ORRIF. Under the monoculture plantation approach, the rubber farmers must obey and follow the instructions given to them. They have no control over the production system, development of rubber varieties, rubber pricing and its selling. The monoculture of rubber is therefore destroying the local wisdom of developing rubber varieties and the farmers' agricultural methods.
6) **Dispute between the state and the people:** The production for sale of rubber has brought about consumer culture and the pursuit for money and wealth to meet the people's want. Simultaneously, the government's promotion of rubber plantation prompted people to encroach upon forest areas to increase their production, as well as illegally cutting forest trees and hunting wildlife.

   On the contrary, development activities were restricted in the areas encroaching upon the people's farmland—where integrated rubber plantation and monoculture plantation had been previously operated--by the government's designation as national parks, wildlife sanctuaries, and watershed forest. Futile rubber trees were not to be cut down, as it was claimed as illegal to do so, while new rubber trees had to be replanted in the same old plots. Offenders were arrested and prosecuted. Such action could not solve the problems, but worsened the dispute between the state and the people. It was more likely that the forest encroachment might be intensified without the communities paying any attention to prevent it.
7) **Potential collapse of the communities and eco-systems:** It was difficult to control and address disease outbreaks in the monoculture plantations of rubber. Soil degradation and topsoil erosion on the slopes were more likely to take place. The rubber prices were beyond the farmers' control and vulnerable to being lowered. If such incident occurred continually, it would affect the farmers' income and resulting in their poverty, lowering of quality of life and other subsequent social problems

5. Rubber farmers' future

The research division of the Bank of Ayudhya Public Company Ltd. conducted a study on the future surplus rubber production and found that between 2002 and 2004, the global

consumption of rubber continued to expand, at an average annual rate of 4.1%. This resulted from the world's economic expansion that clearly prompted increased demands for rubber, particularly in the developing countries where their industries and economies have continued to grow. Consumer countries, such as China and India, saw their rubber consumption increase more than 20% because of the rapid growth of China's automobile industry and road construction to link up its different regions. Natural rubber was turned into motor tyres and bridge neck tyres of the newly-built roads in China. Today, China is the world's biggest consumer of rubber. In 2004, China's consumption demand for natural rubber amounted to 1.5 million tons or about 18% of the global consumption. But China's annual production capacity is not more than 0.5 million ton, thus it needs to import natural rubber from other countries. Other industrialized countries, such as the US and Japan, saw their rubber consumption increase at an annual rate of about 3-5%. In 2004, the US—the world's second biggest consumer of rubber—needed 1.1 million tons of natural rubber whereas Japan's need amounted to around 0.8 million ton.

Table 7: Projected Rubber Plantation Expansion of the Producing Countries

Country	Area/Production	Projected Rubber Plantation Expansion
Thailand	13.5 million rai (2.16 million hectares)/2.9 million tons	One million rai (160,000 hectares) of rubber plantation was to be increased during 2004-2006 in the North and Northeast. It was expected that the rubber production would be increased by 250,000 tons per year. The promotion areas will gradually yield their returns in 2010 and the maximum crops will be harvested in 2013.
Indonesia	21.45 million rai (3.43 million hectares)/1.85 million tons	More tapping areas of the new plantations on Sumatra was to be expanded and began to yields their returns in 2004, with an expected increase of 7.5%
Malaysia	8.45 million rai (1.35 million hectares)/1.1 million tons	Increases were expected of both large-scale and small rubber plantations to amount to about 25% or 1.24 million tons.
China	3.86 million rai (0.62 million hectares)/0.48 million ton	Domestic rubber plantations were to increase while its overseas plantations on 30-year-long rented land in Laos, where China was responsible for the first 6-7 years of maintenance. Then, they would be operated on a contract-farming basis, whereby the profits would be shared at a ratio of 60:40.
Vietnam	2.92 million rai (0.47 million hectares)/0.4 million ton	In 2004, domestic rubber plantations were expected to increase to 3.13 million rai (0.50 million hectares) whereas the Vietnam-Laos Rubber Joint-stock Company has rented 10,000 hectares of land in Laos' Chmapasak province to plant rubber trees for Vietnam.

Source: www.krungsri.com

Nevertheless, the consumption of natural rubber is still lower than that of synthetic rubber. But more countries tend to consume natural rubber more. This is owing to the higher prices of oil, which is an important raw material of the synthetic rubber production. Thus, the prices of synthetic rubber need to rise. But if the natural rubber

prices get too high, industrial operators will have to turn to use synthetic rubber more and that will eventually lower the prices of natural rubber.

The current consumption of rubber is increasing. China, in particular, has to import one million tons of rubber each year. At the same time, industrialized countries do not reduce their demands for rubber. But there is no guarantee that rubber prices will not plummet again as occurred in the past, as many countries including those consumer nations have increased their rubber plantation areas within as well as outside of their countries. These new rubber plantations will start to yield their return in 2010. And if any political and economic crisis arose in the countries importing rubber from Thailand, especially China, Japan and Malaysia, Thailand's rubber sale would decrease and the prices plunge. To export to other industrialized countries would be difficult because they need block rubber while Thailand's main production is smoked sheet rubber. Although the government established a joint venture between Thailand, Malaysia, Indonesia and Vietnam to bargain rubber prices and handle potential crisis, negotiation of prices will be difficult as Malaysia has now become a consumer country. It is unlikely that Malaysia will let itself be disadvantaged. Moreover, the joint venture's members are not actively obliged to comply with the agreement particularly that on the plantation reduction to prevent the surplus supply.

Despite the fact that rubber-product businesses have generated an enormous income, it was found on many occasions that the workers' wages were comparatively low. Protest demonstrations were organized but having no bargaining power. Lacking any political awareness, such demonstrations were instigated by certain capital groups and politicians, who wanted to get rid of their rivals. Take the case of the Tek Bee Hang Group for example. The group supported their workers to encourage the workers of other factories to establish their trade unions to demand for higher wages and welfare benefits. When those factories could not meet their workers' demands, the group then took advantage of the situation to take over the factories. After that, as many as 400 workers were laid off to break up the trade unions.

With the government support and promotion, the rubber farmers also formed their groups to collect and process their produce and negotiate rubber prices. But so far, all they could do was to produce more higher-quality rubber so that they could earn more income. As time passes, it is more difficult for the rubber farmers to organize themselves and be independent of the market mechanisms. The monoculture plantation makes the rubber farmers to rely solely on their plantations for all livelihood necessities, including food plants and animals. Consequently, they have to spend their time and energy working harder and think less of organizing groups. The currently rising prices of rubber have pushed the rubber farmers deeper into the consumerist way of life. Unnecessary and non-productive goods have been bought increasingly. As the households and communities do not have adequate economic security, they will be hard hit when the rubber prices drop.

A good example is the organization of the **"Rubber Farmers' Group of Mai Riang"**. The group manage the community rubber production in Nakhon Si Thammarat's Chawang district, could raise the community fund of one million baht to run its activities. Later on, the government provided support so that the group could build its rubber processing plant, which had the daily production capacity of four tons. In 1974, the group could produce and send its product to sell at Klong Toey Port. But the success of the community plant lasted only a few years before it was adversely affected by the global market fluctuations. The monopoly system also destabilized the returns of the production yields. To address these problems, the

group decided to build up its rubber production networks with 11 nearby communities and financially funded by government budget.

Consequently, the relationship between the communities of rubber farmers, fruit planters and rice farmers was formed and developed as the **"Yomana Network"**. In 1996, the network submitted its **"Thai Rubber Development Master Plan"** to the government to address the country's rubber-related problems in a systematic manner, starting from its production; to primary processing that should be a community industry and has its own rubber warehouse; and market supply that ought to be in the control of the rubber farmers. Mai Riang community managed to present its master plan the rubber farmers all over the country and cooperated with national networks of rubber farmers to hold several public discussions with the rubber farmers in seven provinces. Meetings with government agencies and concerned politicians were also organized, but the community input in the national policies was not appreciated. The community, thus, laid down its policies to solve their own problems.

From then on, Mai Riang has elevated itself to the level of self-sufficiency in many aspects. "Mai Riang Community Learning and Development Center" was then established to educate community members and collect a variety of information to be used for the analyzing and making of the **community master plan** in 1996. In 1998, **"Mai Riang Community Leader Council"** was set up by selecting five leaders from each village to sit on the council and jointly examined the community's needs to come up with a practical problem-solving process that would bring about community self-reliance. Training courses on a variety of topics were provided to meet the needs of the community and build the villagers' capacity, such as those on community leadership, farming methods, occupational diversification and supplementary-income generation that would be alternatives to rubber plantation. There were group activities and occupational training courses that accommodated different interest of each village too. But the production of each village had to vary to avoid the community's overproduction.

In fact, many groups of rubber farmers were formed. The first group—Sheet Rubber-selling Group of ban Phru--was started in 1969 in Moo 1 of Ban Phru subdistrict in Songkhla's Hat Yai district. It was believed that the collection of sheet rubber as a group would be huge enough to have a strong bargaining power to directly sell to big traders or exporters at higher prices. The group instructed its members to bring in their produce on the date and time scheduled by the group and took the collected rubber to sell to traders at Hat Yai market. The group could actually sell at higher prices. Therefore, small-scale rubber farmers in other areas began to be interested in following the approach of the Sheet Rubber-selling Group of ban Phru. This resulted in numerous groups being organized, including those supported by government agencies.

However, many rubber collection groups did not succeed because of the following factors:

1. The middlemen's manipulations: Such as forcing down the prices, underestimating the quality of the groups' sheet rubber, cheating on the rubber weight, and buying rubber from community rubber farmers at high prices; and
2. The groups' members: Including conflict within the groups and members' lack of confidence in the groups system, resulting in their withdrawal from the groups when better benefits were offered by the traders.

The current way out of the rubber farmers is to rely on other activities instead of depending solely on rubber plantation. At the same time, household expenses are to be reduced by growing fruit trees in the plantations and planting garden vegetables around the houses. Such

activities not only increase their household economic security but also restore and protect the environment and bio-diversity, as well as bring about food security to the communities. A study by the NGO Coordinating Committee on Rural Development in the South (1997) on the local wisdom-based integrated rubber plantation—where indigenous rubber trees were previously planted in combination with other trees and plants--found that the indigenous plantation pattern could well build up food security and protect bio-diversity. But such local wisdom was destroyed and replaced by the monoculture of rubber plantation.

The government is obliged to build up the economic and social security for the rubber farmers. Such obligations include passing an act to protect the rights of small-scale farmers from market and genetic monopolies, recognizing the rights of the farmers, whose farmland was encroached upon by the government's designation of conservation forests, and maintaining fair rubber trading. In addition, support should be given to the integrated rubber plantation and rubber farmers' organization. The market control policy ought to be implemented instead of allowing the production to follow the market's short-term demands that have brought on problems.

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