

กฎหมายตัวเงิน



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Development of Legislative Measures for Sustainable Management in Rubber Industry

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Abstract— The rubber industry in Thailand has three major components: upstream, midstream and downstream industries known as plantation sector, semi-finished production sector and finished production sector. These three industries are controlled by Rubber Control Act B.E. 2542, while only the upstream industries are promoted by Rubber Authority of Thailand Act B.E. 2558. From these two acts, it is argued that their legislative measures may be unrealistic to exactly enforce all. Therefore, they should be developed to meet sustainability in rubber industry. Presented in this paper is a development of legislative measures for sustainable management in rubber industry. The in-depth interview and focus group were applied to investigate the impact of legislative measures on upstream, midstream and downstream industries. The results show that some legislative measures should be repealed. It also reports the guidance for developing the legislative measures in rubber industry.

Keywords— legislative measures, sustainable management, rubber industry

I. INTRODUCTION

In Thailand, the rubber industry is classified into three major components: upstream, midstream and downstream industries as shown in Fig. 1 [1, 2]. The upstream industries involve the rubber growing and harvesting on plantations by growers and tappers. The growers take young rubber trees from the officers to put in the plantation. When a full-grown tree is reached, the bark of the tree is cut by the tapper to collect the latex in the cup. When the tapper is added a formic or acetic acid in the latex to coagulate, the crude rubber or dried rubber products, known as cup lump rubbers, are produced. All upstream productions are consumed as inputs into domestic midstream industries. The midstream industries involve the semi-finished rubber production from the latex or cup lump rubber by manufacturers. The latex is converted into the concentrated latex and the cup lump rubber is converted into rubber sheet known as ribbed smoked sheet (RSS), block rubber known as technically specified rubber (TSR) or standard Thai rubber (STR), mixture rubber known as compound rubber and others such as skim rubber, crepe rubber, and so on. Their qualities and properties are required as inputs to downstream industries in both the domestic and international downstream industries. The downstream industries involve the finished rubber production from the concentrated latex, rubber sheet, block rubber, compound rubber and others by manufacturers. The concentrated latex is applied to produce latex gloves, condom, thread and balloon, and the rubber sheet, block rubber and compound rubber are applied to produce automotive tires and parts, rubber shoes and so on.

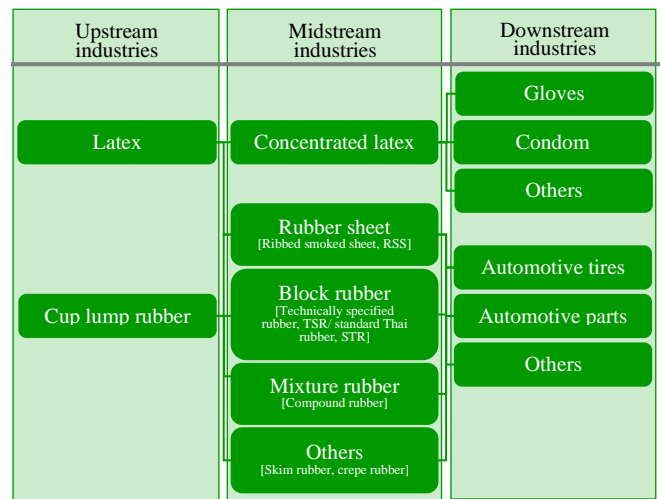


Fig. 1. Thailand's domestic rubber industries.

These three industries are pursuing sustainable management for investing in fair-trade products and reducing costs. However, these three industries have been controlled by two acts: Rubber Control Act B.E. 2542 and Rubber Authority of Thailand Act B.E. 2558 which objectives are different. The Rubber Control Act B.E. 2542 as the first act, which has been taken by the officers of the Ministry of Agriculture and Cooperatives, MOAC, [3] is enacted for controlling rubber seeds and plant for growers, and controlling export for exporters. While the Rubber Authority of Thailand Act B.E. 2558 as the second act, which has been taken by the officers of the Rubber Authority of Thailand, RAOT, [4] is enacted for managing rubber industry system, researching and developing rubber, enterprising and allocating fund for growers. Both acts may not be convenience for these three industries.

Five legislative measures of these two acts: rubber tree types, plantation, central market establishment, export, rubber price stabilization as illustrated in Table 1. For the upstream industries, the growers have to register the plantation to the officers of the MOAC before taking young rubber trees, which are recommended from the officers of the MOAC, from the officers of the RAOT to put in their plantations where are recommended by the officers of the MOAC. When a full-grown tree is reached, the tappers cut the bark of the tree to collect the latex. If the tapper is added a formic or acetic acid in the latex to coagulate, the crude rubber or dried rubber products, known as cup lump rubbers, are produced. Then, the enterprising third parties, rubber industries, rubber cooperatives, and public enterprise officers buy the latex

and/or cup lump rubbers with the different rubber prices at open space, factory, cooperative and rubber central market respectively. For the midstream and downstream industries, when the manufacturers need to sell the rubber products aboard, they have to not only check their quality of rubber products at the laboratory permitted by the officers of the MOAC, but also submit the export permission to the officers of the MOAC before exporting. Moreover, when three industries suffer from the decline in rubber price, the officers of the MOAC and the officers of the RAOT authorize to use these two acts for rubber price stabilization.

From both acts, these five legislative measures, therefore, should be developed to meet sustainability in rubber industry. Presented in this paper is a development of legislative measures for sustainable management in rubber industry. The next section presents the impact of legislative measures on upstream industries, followed by the impact of legislative measures on midstream and downstream industries. The fourth section presents the development of legislative measures in rubber industry. The conclusion is addressed in the last section.

TABLE I. FIVE LEGISLATIVE MEASURES

Measures	Rubber Control Act B.E. 2542			Rubber Authority of Thailand Act B.E. 2558		
	U	M	D	U	M	D
1. Rubber tree types	✓			✓		
2. Plantation	✓					
3. Central market establishment	✓	✓	✓	✓	✓	✓
4. Export		✓	✓	✓	✓	✓
5. Rubber price stabilization	✓	✓	✓	✓	✓	✓

Remark: U = Upstream industries, M = Midstream industries, and D = Downstream industries.

II. IMPACT OF LEGISLATIVE MEASURES ON UPSTREAM INDUSTRIES

Since four legislative measures in upstream industries are definitely different, it may be unrealistic to exactly enforce all. Therefore, this research attempts to investigate the impact of four legislative measures on upstream industries. To provide a tangible justification in this research, in-depth interview was applied. The sample consisted of 400 rubber agriculturists from four-region grouping: the northern, southern, eastern, and northeastern region. Each region was 100 rubber agriculturists. As illustrated in Fig 2, the number of registered rubber agriculturists from the northern, southern, eastern and northeastern region is 83, 100, 43 and 91 rubber agriculturists respectively. Due to plantation regulation, the 59, 73, 36 and 59 rubber agriculturists of 83, 100, 43 and 91 rubber agriculturists are supported by the officers of the RAOT.

These 400 rubber agriculturists were interviewed in four issues: rubber tree types, plantation, central market establishment and rubber price stabilization as illustrated in Table 2. The results show that the rubber agriculturists' requirements are rubber breeder permit, definition of rubber tree types, rubber plantation zoning, rubber plantation registration, central market establishment for trading, knowledge management of the rubber fund cooperative, centralized agency for determining the same rubber price, rubber processing promotion and rubber price guarantee. These requirements were used to develop legislative measures in rubber industry.

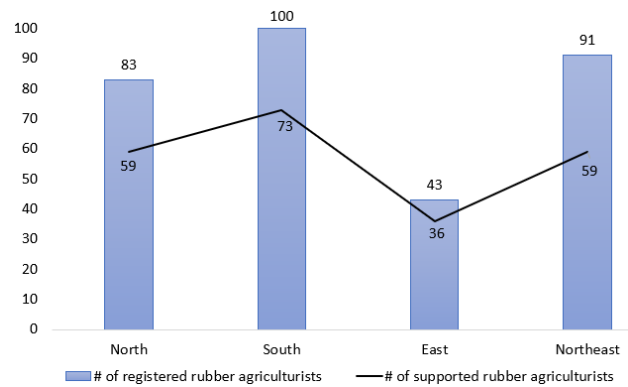


Fig. 2. The number of registered rubber agriculturists and the number of supported rubber agriculturists in each region.

III. IMPACT OF LEGISLATIVE MEASURES ON MIDSTREAM AND DOWNSTREAM INDUSTRIES

Since three legislative measures in midstream and downstream industries are definitely different, it may be unrealistic to exactly enforce all. Therefore, this research attempts to investigate the impact of two legislative measures on midstream and downstream industries. To provide a tangible justification in this research, in-depth interview was applied. The sample consisted of twenty rubber manufacturers, who produce the rubber products in both the domestic and international midstream and downstream industries, from four-region grouping: the northern, southern, central and eastern, and northeastern region. As illustrated in Fig 3, the percentage of rubber processing business is the most, 75%.

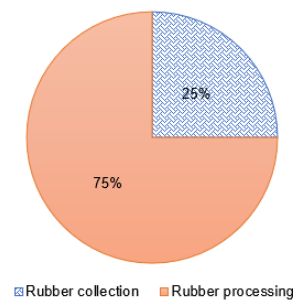


Fig. 3. The percentage of rubber collection and rubber processing businesses in the entire country.

These twenty rubber manufacturers and exporters were interviewed in four issues: central market establishment, export and rubber price stabilization as illustrated in Table 3. The results show that the rubber manufacturers and exporters' requirements are central market establishment for trading, export quantity limit, rubber packaging, rubber license permit, border pass permit, rubber license period, Export tax, robust rubber fund cooperatives, rubber processing promotion, rubber policy defined by merchants, rubber price guarantee and rubber coordinator. They were used to develop legislative measures in rubber industry.

TABLE II. LEGISTRATIVE MEASURES OF UPSTREAM INDUSTRIES

Measures		Voices of rubber agriculturists	Rubber agriculturists' requirements
1. Rubber tree types	According to Article 21 in the Rubber Control Act B.E. 2542, the agriculturists are recommended good rubber tree types from the officers of rubber research institute, the MOAC.	Since the agriculturists specialize in rubber for a long time, they want to breed rubber tree types by themselves.	Rubber breeder permit
	According to Article 4 in both the Rubber Control Act B.E. 2542 and the Rubber Authority of Thailand Act B.E. 2558, the definitions of rubber tree types are the same.	The agriculturists do not know whether they should follow the Rubber Control Act B.E. 2542 or the Rubber Authority of Thailand Act B.E. 2558.	Definition of rubber tree types
2. Plantation	One of government policies for solving rubber price crisis is other agricultural plantations instead of rubber plantation.	If the agriculturists fell rubber trees and plant other trees, they do not know where they should sell their new products from these trees.	Rubber plantation zoning
	According to Article 6(4) in the Rubber Control Act B.E. 2542, the agriculturists have to register rubber agriculturists by informing rubber plantation, rubber tree types and rubber contents. Then, the registered rubber agriculturists are promoted by the RAOT according to Article 36 in the Rubber Authority of Thailand Act B.E. 2558.	The agriculturists have to contact both the MOAC and the RAOT before taking the rubber trees. It will be nice if it is one stop service.	Rubber plantation registration
3. Central market establishment for exchange	According to Article 6(9) in the Rubber Control Act B.E. 2542, the central markets for exchange the natural rubber are established by MOAC. While the Rubber Authority of Thailand Act B.E. 2558, Article 9(1) defines that the RAOT develops robust market system.	There are three systems. Firstly, the agriculturists sell the rubbers at the enterprising third party's auction. Secondly, the agriculturists sell the rubbers at a factory. Lastly, the agriculturists sell the rubbers at the RAOT's auction. These three systems are unfair for the agriculturists. It will be nice if the central market for trading is established to determine the same rubber price.	Central market establishment for trading
4. Rubber price stabilization	According to Article 6(8) in the Rubber Control Act B.E. 2542 and Article 8(4) in the Rubber Authority of Thailand Act B.E. 2558, the MOAC and RAOT authorize management for maintaining the stable rubber price.	It will be nice if the government provides knowledge management of the rubber fund cooperative.	Knowledge management of the rubber fund cooperative
		The centralized agency should determine the rubber price in the entire country.	Centralized agency for determining the same rubber price
		The government should extremely support the production and use of the rubber products in country.	Rubber processing promotion
		The government should interfere in the rubber price.	Rubber price guarantee
		The funds should support the rubber price missing.	

TABLE III. LEGISTRATIVE MEASURES OF MIDSTREAM AND DOWNSTREAM INDUSTRIES

Measures		Voices of rubber agriculturists	Rubber agriculturists' requirements
1. Central market establishment for exchange	According to Article 6(9) in the Rubber Control Act B.E. 2542, the central markets for exchange the natural rubber are established by MOAC. While the Rubber Authority of Thailand Act B.E. 2558, Article 9(1) defines that the RAOT develops robust market system.	The central market establishment effects on the rubber price that result in the high competition.	Central market establishment for trading
		The agriculturists can sell their rubber products at the best price.	
		It is easy to buy the rubber products from the agriculturists at the private central market.	
		It is time consuming if the agriculturists sell at the public central market. The public sector should support local market instead of central market.	
2. Export	According to Article 4 and 6(8) in the Rubber Control Act B.E. 2542, the MOAC controls the export quantity.	Due to advance sale, the rubber products cannot export to meet customers' requirement, if the government controls the export quantity.	Export quantity limit
		According to Article 6(10) in the Rubber Control Act B.E. 2542, packaging method is defined for export.	Rubber packaging
	According to Article 22 in the Rubber Control Act B.E. 2542, the rubber merchants are permitted trading.	It is not convenient.	Rubber license permit
	According to Article 27 in the Rubber Control Act B.E. 2542, the rubber products go through customs where the exporters inform in advance.	If the rubber products go through custom where is not identified in border pass permit, the export fee occurs.	Border pass permit
	According to Article 31 in the Rubber Control Act B.E. 2542, the rubber license period is 1 year.	It is too short period.	Rubber license period
	According to Article 47 and 48 in the Rubber Authority of Thailand Act B.E. 2558, the RAOT authorizes to collect export tax in order to support the agriculturists, prevent smuggling and distort the rubber price.	Instead of the exporters, the agriculturists pay export tax.	Export tax
		The rubber products are still smuggled out of country.	
The amount of export tax is high, but the amount of money for the rubber aid fund is low.			
3. Rubber price stabilization	According to Article 6(8) in the Rubber Control Act B.E. 2542 and Article 8(4) in the Rubber Authority of Thailand Act B.E. 2558, the MOAC and RAOT authorize management for maintaining the stable rubber price.	The government should establish rubber fund cooperative to determine the same rubber price.	Robust rubber fund cooperatives
		The government should extremely support the production and use of the rubber products in country.	Rubber processing promotion
		The government should support the big company to do the rubber processing business for supplying in country and aboard.	
		The rubber merchants should determine rubber policy instead of government policy.	Rubber policy defined by merchants
		The government should establish the central market to determine the same rubber price.	Central market establishment
		The government should support the rubber price missing.	Rubber price guarantee
		The RAOT should be coordinator for trading.	Rubber coordinator

IV. DEVELOPMENT OF LEGISLATIVE MEASURES IN RUBBER INDUSTRY

From the results of interviews, the focus group was applied to obtain the experts' opinion who are executives and practitioners in the rubber industry. These twenty rubber exports were interviewed in five issues: rubber tree types, plantation, central market establishment, export and rubber price stabilization as illustrated in Table 4. The questions were applied to obtain the experts' opinions in each issue. The exports' opinions were both agreement and disagreement. The majority of exports' opinions agreed with below.

1. The definition of rubber tree types in both acts should be the same.
2. The suitable planation for rubber tree types should be defined in both acts, but the government should not enforce it.
3. It should be defined the method of plantation management.
4. For the registered rubber plantation, it will be nice if it is one stop service.
5. It is futures exchange. Therefore, the central market establishment for exchange should be repealed.
6. It is fair-trade products for the agriculturists, if the central market is established.
7. It is reduced cost if the border pass permit should be improved.
8. The rubber license period should be improved because it is to short and inconvenient for export.
9. In the past, the export tax is defined as 2 baht/kilogram since the rubber price is high. In the present, the exporters suffer from the decline in rubber price. The agriculturists are forced into the export tax instead of the exporters. The method of the export tax collection should be improved.
10. For the rubber price stabilization, it is market mechanism.

While the majority of exports' opinions disagreed with below.

1. The new regulation for rubber breeder permit is taken into account by department of agriculture.
2. It is poor quality, if the rubber breeder permit is not controlled.
3. The punishment is defined in the Forest Act B.E. 2484.
4. It should be flexible for rubber packaging.
5. It is not flexible for trading with the standard of other rubber products.
6. It is no opportunity for adjusting the small exporters. They lose the opportunity.

After obtaining the experts' opinions, twelve legislative measures are proposed below.

1. The Article 4 in the Rubber Authority of Thailand Act B.E. 2558 should be repealed because the agriculturists do not know whether they should follow the Rubber Control Act B.E. 2542 or the Rubber Authority of Thailand Act B.E. 2558.

2. The government should act the rule of developed rubber breeder and the agriculturists should be supported by the RAOT if their rubber breeder is allowed.

3. The RAOT authorizes to define the rule of rubber plantation zoning because there are a lot of rubber tree in Thailand.

4. The RAOT should provide one stop service.

5. The RAOT should expand the central market to all provinces, because central market establishment is unfair-trade products for the agriculturists.

6. The government should act that the exporters can design packaging by themselves or according to customer's requirement, because the rubber products cannot be packed to meet customers' requirement.

7. There are several types of the rubber products that are exports, such as concentrated latex, rubber sheet, block rubber and so on. However, only block rubber is defined the rubber standard. Therefore, the government should act the rubber standard for all.

8. The Article 27 in the Rubber Control Act B.E. 2542, should be revised that the rubber products can be exported anywhere, because the rubber products go through custom where is not identified in the border pass permit.

9. The rubber license period should be 3 years, because it is too short.

10. The government should definitely inform time beforehand, because the export quantity control limits the rights of exporters.

11. The RAOT should adjust the export tax, because the agriculturists are forced into the export tax instead of the exporters,

12. The RAOT should act to support the use of rubber products in country for the rubber price stabilization, because the RAOT authorizes according to Article 8(4) in the Rubber Authority of Thailand Act B.E. 2558,

V. CONCLUSIONS

This paper presents a development of legislative measures for sustainable management in rubber industry: upstream, midstream and downstream industry. The in-depth interview and focus group were applied to investigate the impact of legislative measures on upstream, midstream and downstream industries. The results show that some legislative measures should be repealed. It also reports the guidance for developing the legislative measures in rubber industry.

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TABLE IV. PROPOSED LEGISLATIVE MEASURES

Measures	Question	The majority experts' opinions	Proposed legislative measures
1. Rubber tree types	1. In both acts, should the definition of rubber tree types be the same?	The majority experts agreed that the definition of rubber tree types in both acts should be the same.	The Article 4 in the Rubber Authority of Thailand Act B.E. 2558 should be repealed.
	2. In the Rubber Control Act B.E. 2542, should the regulation for rubber breeder permit be improved?	The majority experts disagreed that the new regulation is taken into account by department of agriculture.	The government should act the rule of developed rubber breeder and the agriculturists should be supported by the RAOT if their rubber breeder is allowed.
	3. In both acts, should the suitable planation for rubber tree types be defined?	The majority experts agreed that the suitable planation for rubber tree types should be defined in both acts, but the government should not enforce it.	
	4. In the Rubber Control Act B.E. 2542, should the rubber breeder permit be repealed?	The majority experts disagreed that it is poor quality, if the rubber breeder permit is not controlled.	
2. Plantation	1. In the Rubber Control Act B.E. 2542, should the plantation management be defined?	The majority experts agreed that it should be defined the method of plantation management.	
	2. In the Rubber Control Act B.E. 2542, should the registered rubber plantation be repealed?	The majority experts agreed that it will be nice if it is one stop service.	The RAOT should provide one stop service.
	4. In the Rubber Control Act B.E. 2542, should special legislative measure be defined punishment for the agriculturists who put rubber trees in the forest?	The majority experts disagreed that the punishment is defined in the Forest Act B.E. 2484.	-
3. Central market establishment	1. In the Rubber Control Act B.E. 2542, should the central market establishment for exchange be repealed?	The majority experts agreed that it is futures exchange.	The RAOT should expand the central market to all provinces.
	2. In the Rubber Control Act B.E. 2542, should the central market for trading be established?	The majority experts agreed that it is fair-trade products for the agriculturists.	
4. Export	1. In the Rubber Control Act B.E. 2542, should the rubber packaging method be improved	The majority experts disagreed that it should be flexible for rubber packaging.	The government should act that the exporters can design packaging by themselves or according to customer's requirement.
	2. In the Rubber Control Act B.E. 2542, should the standard of other rubber products, such as concentrated latex and so on, be defined?	The majority experts disagreed that it is not flexible for trading.	The government should act the rubber standard for all.
	3. In the Rubber Control Act B.E. 2542, should the border pass permit be improved?	The majority experts agreed that it is reduced cost.	The Article 27 in the Rubber Control Act B.E. 2542, should be revised that the rubber products can be exported anywhere.
	4. In the Rubber Control Act B.E. 2542, should rubber license period be improved?	The majority experts agreed that it is not convenient for export.	The rubber license period should be 3 years.
	5. In the Rubber Control Act B.E. 2542, should rubber license period be improved?	The majority experts agreed that it is too short period.	
	6. In the Rubber Control Act B.E. 2542, should the legislative measure of export quantity limit be improved?	The majority experts disagreed that it is no opportunity for adjusting the small exporters. They lose the opportunity.	The government should definitely inform time beforehand.
	7. In the Rubber Authority of Thailand Act B.E. 2558, should the method of the export tax collection be improved?	The majority experts agreed that in the past, the export tax is defined as 2 baht/kilogram since the rubber price is high. In the present, the exporters suffer from the decline in rubber price. The agriculturists are forced into the export tax instead of the exporters.	The RAOT should adjust the export tax.
5. Rubber price stabilization	Is there no policy for the rubber price stabilization?	The majority experts agreed that it is market mechanism.	The RAOT should act to support the use of rubber products in country for the rubber price stabilization.