



## Research project of counterparts funded at UNJA

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C01

Study of Rubber Material (*Bokar*) Processing and Quality for Smallholders in Jambi Province

### Background and Methodology

Over two million families are engaged full time in the Indonesian rubber cultivation. Rubber commodities are still the main source of economic growth in Jambi Province. However, farmers only receive 40-60 % from the selling price (Yanita 2017). The low price of rubber for the smallholders are due to the low amount of dry rubber content. This issue is followed by the smallholders' problem in plantation where the raw material produced is generally of low quality due to poor handling of the material. Another issue is that the rubber marketing system is not yet efficient. Yet another problem is that the rubber material containing impurities and high ash content is very influential on the quality of downstream rubber products. The first research objective is to evaluate the application of regulations concerning Guidelines for Processing and Marketing of Rubber material (*bokar*) and the controlling of Rubber Material Quality of Indonesian Standard Commodities traded. The second objective is to analyze the implementation of rubber price determination by traders using a survey method in regions with the highest and lowest productivity rates, in Merangin District with the lowest productivity and Bungo Regency with the highest productivity. The data collected were primary and secondary sources. The analysis is made using descriptive quantitative methods by looking at the implementation of regulations on the processing and quality of the rubber material and the implementation price determination by traders at the farm gate.

### Results

The average volume of *bokar* produced by farmers in each sample village was 152,5 tons per month. Most *bokar* farmers sold weekly (59%) to traders/middlemen, both individually and in groups. Farmers who sell *bokar* on a monthly basis or in every two weeks are mostly the group of participants who sell *bokar* through *bokar* processing and marketing unit in the marketing group or cooperation.

**Table 1.** Volume and storage life of raw rubber material in Smallholder level in Merangin and Bungo Regency 2019

Regency	Raw rubber material volume at village (Tones/months)	Raw rubber material storage life %			
		1 Bulan 1 Month	2 Minggu 2 Weeks	1 Minggu 1 Week	Harian Days
Merangin	170	9	25	55	11
Bungo	135	8	21	63	8
Average	152,5	8,5	23	59	8,5

Source: Primary data

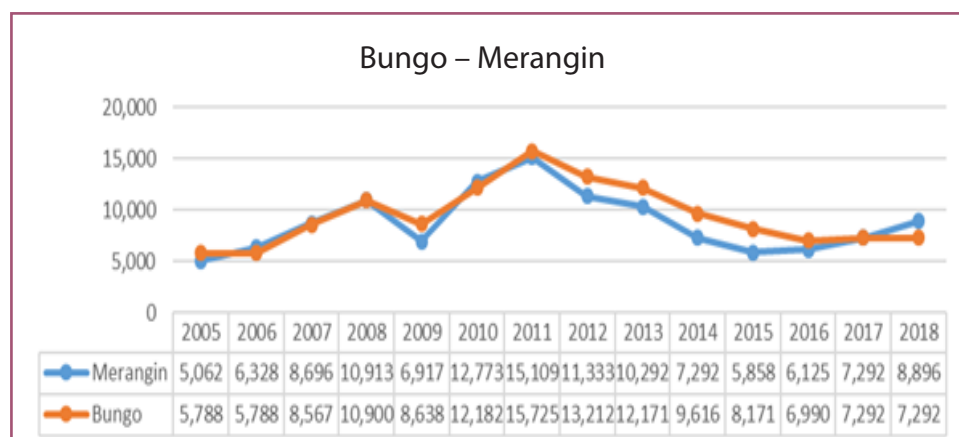
Most smallholders produce rubber material in the form of slab lump (100%). As many as 71 % of farmers have produced clean slabs and the remaining 29 % of farmers are still producing slabs mixed with *tatal* (tapped bark). The average thickness of slab produced by farmers is more than 20 cm with a slab weight ranging from 50–100 kg per chip. Farmers prefer thick slabs for the reason of avoiding slab theft, while for traders / middlemen, buying thick slabs increase the risk of water content shrinkage, therefore traders tend to hold down rubber material prices because of the high-water content or due to the low dry rubber content.

**Table 2.** Cleanliness level, weight, and thickness of slab, as well as types of raw rubber materials in Merangin and Bungo Regency 2019

Regency	Cleanliness (%)		Slab weight unit (kg)		Slab thickness (%)		Type of raw rubber materials (%)		
	Clean	Dirt	Min.	Max.	<20 cm	>20 cm	Slab	Lumb	Slab Lumb
Merangin	68	32	40	100	20	80	0	0	100
Bungo	77	23	31	90	15	85	0	0	100
Average	72,5		35,5	95	17,5	82,5	0	0	100

Source: Primary data

In average, smallholders produced clean rubber, while others still add additional materials. Based on the survey, sometimes, traders do not appreciate the clean rubber, moreover the smallholders have usually had some debt from the middleman already. This indicates that they do not have a bargaining position in determining the price, even when the international price rises. This result is supported by Napitupulu (2018) where it shows that there is no linkage between the quality of rubber material and income received by smallholders because of the price change.



**Figure 1.** Smallholders Price level at Merangin and Bungo Regency 2005-2018

Rubber material soaking is still found, even if only a little, as an alternative to rubber material storage. Soaking of rubber material is still carried out by farmers in the sample area of Merangin District (10%). In fact, there are some farmers in

Merangin District who perform printing and freezing of the rubber material in the ground hole. In addition, most of the rubber material produced from the Merangin area contains a lot of impurities. The type of freezing materials used by farmers is mostly vinegar, and the sub districts of Pelepat and Tabir Ilir shows a good condition of rubber material, seen from the unsoaked and relatively clean rubber storage. However, at the smallholder level, it is still necessary to improve the recommended use of coagulants (freezers). Rubber material marketing groups have been formed and developed in the region. The impact of the development of marketing groups affects the quality of rubber material produced by farmer members. Good quality rubber material is made because of group rules that require members to process the rubber material according to standards requested by the factory and also due to the appreciation of high-quality rubber material produced, by the high prices given to smallholders.

**Table 3.** Use of rubber coagulant at smallholders level in Merangin and Bungo Regency 2019

Regency	Coagulant %					
	Decrub	Formic acid	Sulfuric acid	TSP	Sulfuric acid + alum	Alum+ others
Merangin	0	65	24	5	4	2
Bungo	0	75	20	1	3	1
Average	0	70	22	3	3,5	1,5

Source: Primary data



**Figure 2.**  
The Coagulant Used in  
Merangin and Bungo Regency

Farmers do not use *deorub* which is recommended by the rubber research center due to the relatively expensive price. Farmers use vinegar as a coagulant, especially one under the brand name 61 vinegar or acid in the brand name of *Gentong*.

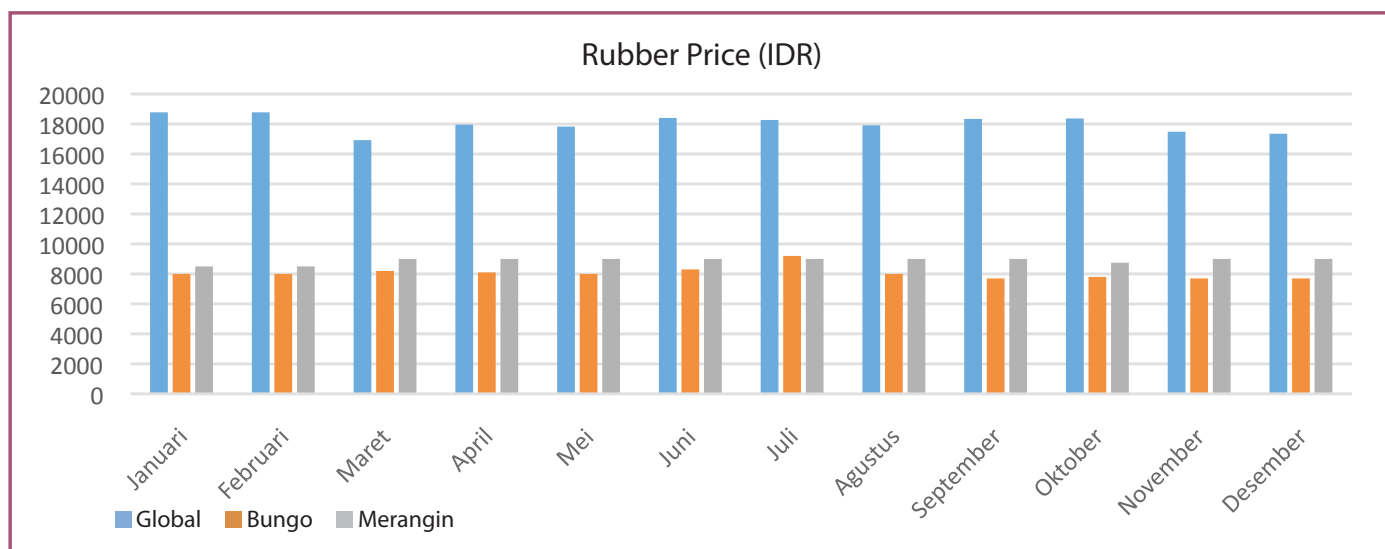
**Table 4.** Storage and molding of rubber material at smallholders level in Merangin and Bungo Regency 2019

Regency	Rubber material storage (%)		Slab mold (%)	
	Soaked	Unsoaked	Ground hole	Plastics box
Merangin	8	92	15	85
Bungo	4	96	10	90
Average	6	94	12,5	87,5

Source: Primary data

The position of farmers as price taker, as is generally the case occurring in monopsonist markets, causes the quality of traded agricultural products to be presented in a variety and it tends to be of low quality. On the other hand, the low quality of agricultural products causes the price of the products to be low. This can be suspected to be one of the factors causing Jambi Province to still produce SIR-20 specification rubber, the lowest permitted rubber quality to be traded in the world rubber market, as indicated by the Singapore Commodity Market (SICOM), the main market for Indonesian dry rubber processed materials or crumb rubber.

The low quality of rubber material produced by smallholders is caused by low motivation in farmers from the beginning to produce rubber with high quality in according to the proper standard. Loss of bargaining power also causes quality determination since it is only determined by the middleman. The method of determining rubber material quality is done in a manner of physical observations only by the naked eye and this leads to the low-price variations being paid by traders to smallholders who have become their loyal customers. Figure 3 showed the price in the Global market, and smallholder level in 2018.



**Figure 3.** Rubber Global Market and Smallholder Level Price 2018

According to the survey, the price offer received by smallholders is between IDR 8100-9100 per kilogram. One of the reasons of the low-price offer is that the dry rubber content in the rubber material is low. It is also caused by the thickness of the slab produced which means that the thicker the material, the more water content in it. Rahman et al (2010)'s research results show that the average dry rubber content (KKK) produced by rubber farmers in Jambi Province is still in the range of 45–55%. While Napitupulu (2018) said that the quality of the rubber material in Jambi Province ranges from 50,09 – 76,14%. There is an increase in quality rubber material produced. However, the smallholders still do not have much bargaining position to determine the price. The Trader does not only consider the DRC but also the previous relation with the smallholders, they claim that there are no changes in rubber material quality produced by farmers. In addition, the fallacy that the thickness and weight of rubber material makes the price more expensive is not applicable to increase the price. This means that the socialization of the Minister Regulation of Trade No.54/M-DAG/Per/7/2016 is very urgently needed for continuous implementation.

### Conclusion

The effort to improve rubber material quality has not been fully implemented at farm level due to the low and uncontinuous socialization of these regulations to the smallholders. In addition, regulations from marketing institutions to reject the low quality of rubber material produced by smallholders are still lenient. It is necessary to maintain the joint marketing system through groups or formal and in formal institutions consisting of smallholder producers. The improvement of quality and price of rubber produced by farmers can be done by growing downstream industries of natural rubber.