

## An Assessment of the Technical Constraints Affecting Rubber Smallholders Production Capacity in Negeri Sembilan

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### ABSTRACT

Malaysia's agricultural sector mainly dominated by different crops which comprises of oil palm, rubber and cocoa. From the statistics recorded, the average yield obtained from the rubber smallholders are very low that is 1,350 kg/ha/yr compared to the national average of 2,000 kg/ha/yr. The objectives of this study are to assess the technical constraints faced by rubber smallholders in Negeri Sembilan and how the technical constraints affect their productions capacity. This study found that most of the rubber smallholders towards the study area gain more or less 1,350 to 1,400 kg/ha/year. Most of them were still produced below the national average eventhough RISDA has provided them guidance and technologies. The main constraints faced by smallholders was they refused to adopt the technologies and most of them could not afford to purchase the technologies.

**Keywords:** Rubber, smallholders, productivity, technical constraints

### Introduction

Malaysia produced 1,283.63 tonnes of Natural Rubber (NR) and exported about 1,018,052 tonnes. Malaysia is still one of the world's major producers of rubber after Thailand and Indonesia. The smallholding sector is still the national major producer. According to Ruttan (2005), major constraints faced by farmers include soil loss and degradation, water logging and salinity, pests and pathogen. The negative impact of the capability of smallholder's production generally related to the institutional characteristics of supply chains and wider socioeconomic and environmental impacts (Henson *et al.*, 2008). A rubber producer's profit depends on the quality and quantity of latex yield, where it is the main product of the rubber tree and the costs involved in producing it. However, because of the uneconomic-sized farms, rubber smallholders are faced with high production costs, low input and low yield of poor quality latex (Purnamasari *et al.*, 1999). Due to constraints, smallholder rubber cultivation is less developed and less latex productivity where latex productivity is a third of their actual potential (Ilahang *et al.*, 2006).

From the statistics recorded, the average yield obtained from the rubber smallholders are very low that is 1,350 kg/ha/yr compared to the national average of 2,000 kg/ha/yr. The income level of most rubber smallholders in Malaysia is about RM256 - RM510 per month. The intention of the development of Rubber Industry Smallholder Development Authority (RISDA) is to help rubber smallholders to achieve incomes greater than RM 2,000 per month for each family. In Negeri Sembilan, most of the rubber smallholders gain more or less 1,350 to 1,400 kg/ha/year (RISDA, 2008) and this below the national average eventhough RISDA has provided them with the advice and technologies. The main reason for the low yield is that the smallholders have been practicing their own farm management which they believe is the best and reluctant in adopting new technology and good agronomy practices which have been recommended by the extension agent.

The factors that affect the rubber productivity are numerous. Some of the factors namely as lack of capital, little access to (micro) credit, poor soil quality, lack of irrigation system, uncertainty about land entitlement and shortage of adequate labor. Besides that, smallholders also deficient in knowledge and technology applied (Gaiha and Tapa, 2007). This study attempts to determine the technical constraints faced by rubber smallholders in Negeri Sembilan that hinder their production.

The objectives of this study were to identify the technical constraints faced by the rubber smallholders in Negeri Sembilan, to identify how the technical constraints hinder the production capacity of rubber and to determine the types of support or assistance from the authority body or any state agencies, received by the rubber smallholders in Negeri Sembilan.

### Methodology

In order to fulfill the research objectives, a survey using questionnaire was conducted on the rubber smallholders to achieve the intentional data. In this study, the questionnaire was divided into three sections. The sections were the technical constraints faced by rubber smallholders, the production (yield and income) of rubber

smallholders and the technical support or assistance received by the rubber smallholders from any agricultural department, state government or any other agencies.

The total population in this study was the total number of rubber smallholders in Negeri Sembilan. The rubber smallholders selected were only confined to the Rubber Industry Smallholder Authority (RISDA) smallholders. However, this study only focused on the Western Zone of Negeri Sembilan which covered three different districts namely Jelebu, Seremban and Port Dicksons due to time limitations. This study was only focused on rubber smallholders having less than 25 years old trees and operating their own rubber farm (*on-operator*). Descriptive analysis using SPSS and Microsoft Excel was formed to assess the technical constraint faced by the rubber smallholders in Negeri Sembilan.

The demographic of *on-operator* smallholders were as below:

Table 1: Demographic of on-operator rubber smallholders in Negeri Sembilan

District	Malay	Orang Asli	Chinese	Indian	Others	Total
Jelebu	1,289	30	1,041	15	3	2,407
Jempol	445	89	262	16	0	827
Kuala Pilah	2,522	87	211	3	2	2,855
Port Dickson	202	3	134	15	1	357
Rembau	1,417	29	61	1	0	1,523
Seremban	755	89	245	55	0	1,154
Tampin	1,325	1	206	48	1	1,593
<b>TOTAL</b>						<b>10,716</b>

## Results and Discussions

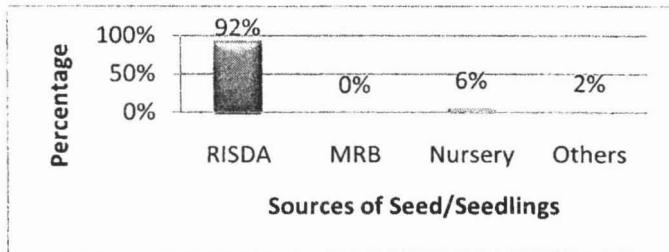


Figure 1: Sources of Rubber Seed/Seedlings by Smallholders

Result were showed by Figure 1. From the graph it was showed that 92% of the respondents get the seeds/ seedlings from RISDA while 6% of the respondents bought the seeds/ seedlings from the nursery and 2% of the respondents get the seeds/ seedlings from other places. According to Wibawa *et. al.*, (2008), a study conducted in Indonesia found that rubber clones have high productivity, there are 2-3 times better than the unselected seedlings, have homogenous growth and responds well to the production inputs such as fertilizers and weeding.

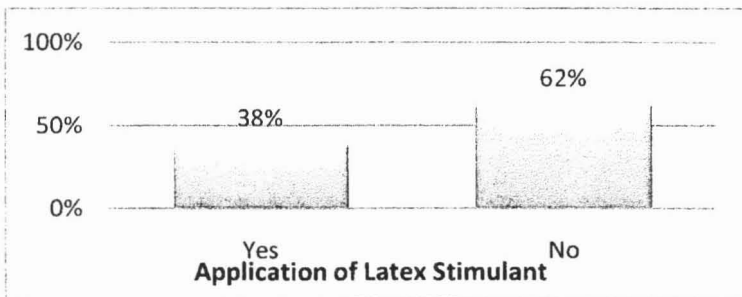


Figure 2: The percentage of Latex Stimulant application

Result on the application of Latex Stimulant by rubber smallholders found that only 38% of the total respondents applied latex stimulant (Figure 2). Latex stimulant is very important especially to the matured tree. It will help to encourage the production of latex. Application of latex stimulant is important to ensure the rubber smallholders produce a good quality of latex. According to Barlow (1999), the new technology is not adopted by most farmers. Thus, the knowledge and handling skills were important to adopt new technologies that have not been subtle at the farm level.

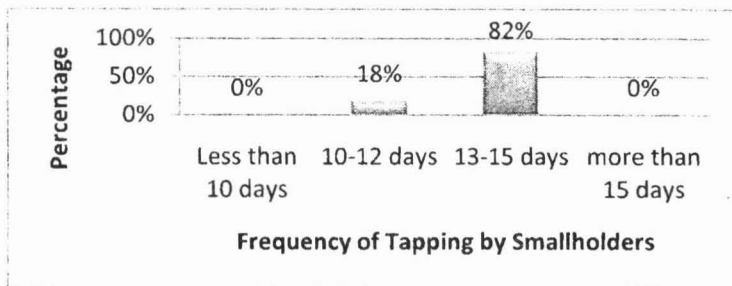


Figure 3: Frequency of Tapping by Smallholders

Result from Figure 3 showed that most of respondents took about 13-15 tapping days in a month. 18% of the respondents took about 10-12 tapping days. They spent most of thier time for festivals, leisure and also depend on the weather. According to Caroline (2005), there are variable tapping systems which have been employed by farmers to maximize yield and optimize profit. The type used by farmers are influenced by various factors such as clone, age of tree, rainfall regime and available time.

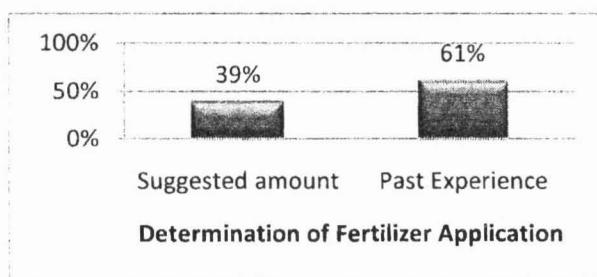


Figure 4: Determination of Fertilizer Application

Result on the Determination of Fertilizer Application (Figure 4) showed that 39% of the respondents applied fertilizers based on the suggested amount by the extension agent while the other 61% decided based on their past experience. Rubber smallholders should apply the appropriate amount of fertilizers to ensure that their rubber tree produce a high quality of latex. According to Ilahang *et al.*, (2006), the growth of rubber trees reflects the combined effect of the genetic potential of rubber and farmer inputs (weeding, fertilizer and pest control). Besides, there are some of the rubber plots that were severely damaged by pests and diseases and were abandoned by their owner at the early stage of cultivation.

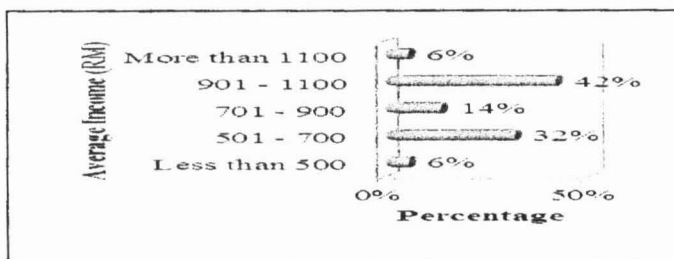


Figure 5: The Average Income of Rubber Smallholders

Result from the Figure 5 showed that 42% of respondents gain a monthly income between RM 901-1100, 32% gain about 501-700, 14% gain about 701-900, 6% gain less than RM 500 and more than RM 1100 respectively. The National Union of Plantation (NUPW) are going to set the monthly wages to the rubber tappers

that linked to rubber price, land yield and labor productivity. The purpose of this setting is for securing rubber tapper a sufficient and stable level of earning.

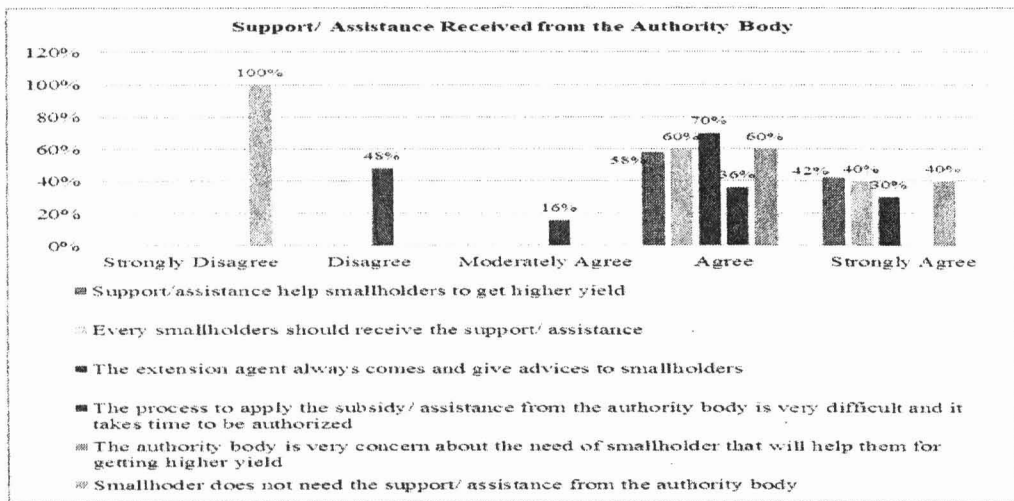


Figure 6: Support / Assistance Received from the Authority Body

Based on Figure 6, 58% respondents agreed while the other 42% strongly agreed that support/ assistance help smallholders to get higher yield. 60% of respondents agreed while 40% strongly agreed that every smallholder should receive support/ assistance. Moreover, 70% of respondents agreed while the other 30% is strongly agreed that the extension agent came and gave advices to smallholders. There are 48% of respondents disagreed while the other 36% strongly agreed and 16% agreed that the process is difficult and timely to be verified. There are 60% of the respondents agreed while the other 40% strongly agree that the authority body is very concern about the need of smallholders and will help them to get a higher yield. In addition, all of the respondents strongly disagree that smallholder does not need the support/ assistance from the authority body.

### Conclusion

Based on the study, most smallholders in Negeri Sembilan especially at the focus area (West Zone of RISDA) still face a few technical constraints such as the seedlings of planting material and refuse to use technology supplied by RISDA. Besides that, they are also producing below the national level. Most of them produced at the average of 200-400 kg/ha/month. There are many innovations offered by RISDA and a few of them have received it but, unfortunately because of the influence from friends and believing in the rumors, most of them refused to use these technologies supplied at no cost.

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