Acceleration Strategies For Rural Economic Development Through The Development of Natural Rubber Industry in Riau Province

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Abstract: The rapid development of agricultural sector in Riau province especially in palm oil commodity had taken over the place of natural rubber cultivation. Since natural rubber cultivation was still run and managed traditionally, its productivity level was low with around 738 kg/ha/year. Lack of maintenance of the rubber trees resulted in low quality raw rubber or latex and many traditional rubber farmers also still produced impure or unclean raw rubber. Moreover, the price of latex at the farmer’s level was determined by the taoke-taoke desa or the village’s illicit brokers and the farmers did not have the power to bargain with them. The Regional Carrying Capacity Ratio (RCCR) analysis of traditional natural rubber cultivation was 1.53 which means that the raw rubber material available exceeds the capacity of the industry. These conditions therefore suppressed the price of raw rubber from the demand side (industry). To increase the price at the farmer’s level, a processing industry needed to be developed to increase the bargaining power of the rural farmers. The economic multiplier effect index in natural rubber development areas in 2014 decreased to 0.65 from 1.83 in 2010. This decrease shows that the natural rubber cultivation had decelerated. However, the main reason for this decrease was because the rural community was beginning to shift to another commodity, which is palm-oil.

Keywords: natural rubber; regional’s carrying capacity ratio; multiplier effect

1. Introduction

The development of the agricultural sector especially in the palm oil commodity had created a disparity in revenues among the regions and among the farmers especially between the rubber and palm oil farmers. The disparities between the two types of farmers were due to fact that the potential of palm oil commodity was guaranteed in the market while the rubber farmers have to deal with a monopsony market. Also, the price of rubber at the farmer’s level was heavily determined by the taoke-taoke desa or the village’s illicit brokers leaving the farmers with no bargaining power over the price. In addition, factories that processed raw natural rubber harvested by the farmers in Riau Province were very limited and the existing factories were not able to accommodate the entire farmers’ harvest.

These whole situations caused a decline in the development of natural rubber and also a decline in the price. Based on the data from the Riau Province Plantation Office (2014), many natural rubber plantation areas had been turned into oil palm tree plantation and this even occurred in areas with more than 15% slope. The total area of natural rubber plantations was 547,453 ha in 2000 and decreased to 505,264 ha in 2014. The same happened to the coconut plantations with 586,418 ha in 2000 which decreased to 520,948 ha in 2014. Meanwhile, the oil palm plantations rapidly increased more than double from 966,786 ha in 2000 to 2,399,171 ha in 2014.
Among many problems that the natural rubber farmers faced were the uncertainty of the price and the low price at the farmer’s level which affected the farmers’ household income. Most importantly, the farmers had to face a monopsony market since there was no established financial institution which could help improve the farmers’ income and the price of the rubber was controlled by the tauke-tauke or a kind of village’s brokers or loan sharks (Syahza, 2015). Nevertheless, based on the Regional Carrying Capacity (RCC), Riau had the potential to develop the natural rubber industry.

Regional Carrying Capacity (RCC) is the ability for the region to provide raw materials for a certain industry within the region. This concept is applicable to the agricultural system since the sustainability of agriculture-based industry relies on agriculture in the broad sense. RCC is measured based on the land capability or the level of land capability to carry out its function as a medium for plant growth in order to reach a certain production level and in this case, the Regional Carrying Capacity (RCC) refers to the capacity to develop palm oil-based downstream industry (Syahza, 2013).

The main objective of this research was to find the model and strategy for organizing the institutions, the natural rubber trade, and the natural rubber industry development in the effort to accelerate economic development in the rural areas. The strategy aimed to add values to the existing livelihood in order to accelerate the development of community’s economy. The result of this research will benefit those who work in agribusiness and also the government as the decision makers in relation to the plantation development efforts. It is hope that improvement may help increase the farmers’ income and thus improve the welfare of the community. This research provides strategic formula to make good use of local resources through plantation and natural rubber industry development in order to assist the acceleration of sustainable development.

According to the result of Syahza’s (2005) research, plantation development in Riau area brought about positive impacts to the economy in the region especially in creating job opportunities. This development caused the trickle down effect that subsequently allowed the power of dispersion to occur in the surrounding community. The bigger the development was, the more significant its impacts were felt by those who worked in the plantation industry and its integral. The impacts could be seen in the increase of farmers’ income which then increased the rural community’s affordability to fulfill their primary or secondary needs.

The impact could also be seen in the communities surrounding the plantations with the creation of job opportunities for local communities such as food stalls, transportation services, household industries, and also banking services. As the results, new traditional markets emerged in the settlement and rural areas. This shows that the income, the welfare, and the level of education of the communities had improved, though, as a side effect, excessive consumption also increased (Syahza, 2007a).

The plantation development activities which involved a lot of manpower and a relatively large investment for the downstream industry was expected to positively stimulate, grow, and create work opportunities. The economic activities resulted from the provision of goods and service during the plantation and the downstream industry development activities created backward linkages. Construction service, labor farmer service, transportation service, food and clothing business, equipment business and also material business were expected to benefit from the activities. Meanwhile, the post-harvest and the production process created forward linkages which were expected to give benefits to the service sectors such as transportation, hotel, co-operatives, banking, and trade (Syahza, 2007b).

The development of plantation in the rural areas opened up new work opportunity for the community members. The business allowed the locals not only to work in the primary sector, but also to expand their business to the tertiary sector. Some examples of these new work opportunity were merchants (selling daily needs, rubber products, transportation tickets and ice cream), employees (teachers, government officials) home industries (tofu, bread, and roof tiles), labors, fishermen, wood gatherers and carpenters (Syahza, 2009).

In Riau Province, the expansion of oil palm tree plantation had created new centers of economic growth to emerge in rural areas while the areas for natural rubber development themselves experienced an economic decline. This condition decreased the affordability of the communities in natural rubber development areas especially for routine daily household and plantation production...
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needs which then decreased demands and goods and people mobility. The natural rubber development areas could not cope and lagged behind their palm oil development counterparts.

The final part of this study provided recommendations for the plantation business institutions from upstream to downstream and it is expected to help formulate a model to add values to the plantation businessmen and to produce value-added integral products. The future development of plantation should no longer solely focus on adding values, but also focus on creating a sustainable plantation development.

2. Discussion

2.1. The Development of Natural Rubber Commodity in Riau

The rubber commodity is one of the leading commodities for Indonesian export. In Riau Province, rubber commodity business is also one of the main livelihoods for the communities. Generally, this commodity has an important contribution to the state revenue, raw material for the industry, and community’s income.

Until now, rubber commodity is a potential commodity which is continued to be developed. However, in its development, the commodity faces three main problems: First, it has a low productivity and it is currently undergoing a decline caused by the superior rubber trees which have entered the end of their useful and productive life. These superior trees were the results of development through various government projects in Riau Province. Meanwhile, independent rejuvenation done by the farmers usually uses less superior seeds. Second, the price of rubber is relatively low and fluctuates which discourages the farmer to continue working in rubber cultivation business. The oligopsony rubber market structure also weakens the farmers’ bargaining position. Third, the shift of function of lands which belong to both farmers and big corporations from rubber plantation to oil palm plantation is happening in a massive scale. All three conditions cause rubber production in Riau Province to decline consistently.

However, when carefully examined, during 2005-2013 period, the total area of natural rubber plantation actually expanded. In Riau Province itself, while in districts such as Indragiri Hulu, Kuantan Singingi, Bengkalis, Rokan Hilir and Siak, the total area of rubber plantations decreased caused by the shift of land function to oil palm plantation, they, in fact, expanded around 20.62% annually in other districts especially in Meranti Island District. (Riau Province Plantation Office, 2014). This expansion, however, did very little to help rubber production which was undergoing a decline since many rubber trees were still not productive.

To maintain the significance of rubber plantations and their existence in Riau Province as the source for state revenue and the source of people’s welfare, various efforts had been conducted to improve the production system aspects. In Riau Province, there were two development methods applied to natural rubber production system: rejuvenation method and expansion methods. The rejuvenation method is a method of plantation development by replacing unproductive (aging/damaged) rubber trees with the new ones and applying new technological innovations while the expansion method is a method to expand the rubber plantation areas by opening new lands or expanding to areas surrounding the existing plantations using new technological innovations.

Based on field observation, most rubber plantations in Riau were still managed traditionally using simple methods. The seeds were planted and the trees were left to grow on their own without any additional care or sufficient maintenance done to the trees and this caused the trees to have a very low productivity with around 738 kg/ha/year. Lack of maintenance also caused low quality raw rubber or latex. On top of this, due to lack of care during collection, the farmers were only able to produce impure or unclean latex.

There were many factors that contribute to the low quality of latex produced by the farmers and they were: 1) low productivity due to the small area of land; 2) the use of less superior rubber seeds; 3) lack of care in plantation maintenance; and 4) the use of incorrect tapping methods. Another factor which contributed to the low quality was the long marketing chain from the farmers to the processing factories. As a consequence, to increase the weight, the rubber farmers added impurities such as wood, leaves, dirt, and other materials to the latex with the hope of gaining more weight even though the latex would eventually be priced lower. Moreover, the rubber farmers had very little knowledge
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on the correct tapping techniques, or the use of coagulation/lumping agents as well as post-harvesting latex management. All these contributed to the low quality of latex produced by the farmers (Bakce, 2014)

The weak bargaining position from the farmer’s side also contributed to the low rubber price received by the farmers. This condition was also influenced by the weak rubber farmer institution and this was proven from the small number of rubber farmers who became members of farmer groups or Kelompok Usaha Bersama (KUB). In 2011, there was only a slight increase (0.06%) in the number of farmers from 244,317 to 245,460 families 2013. This was because members of the community were more interested in developing palm oil commodity even in areas with more than 15% slope.

The natural rubber plantations in Riau Province were still managed traditional using the skills which had been handed down for generations. Technology and superior seeds were not used which caused low productivity for the lands. Based on field observation related to the rural rubber farmer institution, there was not a single group participating in the Latex Processing and Marketing Unit or Unit Pengolahan dan Pemasaran Bokar (UPPB) as mandated in the Agricultural Minister Regulation No.38 Year 2008. The establishment of UPPB by rubber farmers provides an opportunity for the farmers to market their latex directly to the rubber processing factories (crumb rubber industry) without dealing the brokers or collectors and the farmers may receive a minimum 75% of the sale price offered at the export port or Free on Board (FOB) price.

Without the farmer group or UPPB, the rubber farmers were forced to struggle individually to sell their latex and eventually, they had no choice but to deal with the brokers which are famously known as the tauke. The nature of trade between the farmers and the brokers goes beyond the economic nature. They form a socio-cultural relationship which turns into a patronage relationship with the brokers as the patrons and the farmers as the clients. However, since the patrons have a tendency to exploit the clients and the clients have no choice but to follow, the welfare of the rubber farmers suffer as the consequence adding to the price of natural rubbers which keep on dropping.

The Agricultural Minister Regulation No.38 Year 2008 on the Guidance for the Latex Processing and Marketing which has been in place since 2008 had not been fully implemented by the regional government. This regulation was supposed to be the guidance to develop the rubber farmer institution and help assist the farmers by giving them bargaining power at the rural level. The rubber business was not able to establish an institution that may help guarantee welfare for the farmers. The aforementioned facts show that the rubber farmer institution both for the businessmen or the informal traders was not well organized and this makes it difficult for the government to provide coaching activities for the rubber farmers.

2.2. The Potential for Rubber Industry Development

The development of natural rubber cultivation business in Riau had not been as fast as the palm-oil commodity. The total area of 505,264 ha could only produce 354,257 tons per year with a total of 245,460 families working rubber plantations. The rubber cultivation industry was supported with 9 processing factories distributed in a few districts with the combined processing capacity of 282,000 tons annually (Gapkindo, 2014). There was also an imbalance between the production capacity of the farmers and the factories. The farmers were able to produce 354,257 tons annually while the factories could only accommodate 282,000 tons annually.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Total area (ha) in 2014</td>
<td>505,264.00</td>
</tr>
<tr>
<td>Production (tons) in 2014</td>
<td>354,256.63</td>
</tr>
<tr>
<td>The existing processing industry (unit)</td>
<td>14</td>
</tr>
<tr>
<td>Built-in capacity (tons/year)</td>
<td>282,000</td>
</tr>
<tr>
<td>Machine capacity (tons/year)</td>
<td>232,000</td>
</tr>
<tr>
<td>Oversupply of raw material (tons/year)</td>
<td>122,256.63</td>
</tr>
<tr>
<td>Regional’s Carrying Capacity Ratio</td>
<td>1.53</td>
</tr>
<tr>
<td>Shortage in the industry (20,000 tons/year)</td>
<td>6</td>
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</tbody>
</table>
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It can be seen that there was an oversupply of raw rubber material from the farmer’s side than what the factories in Riau Province could accommodate and this caused the price to fluctuate at the farmer’s level. The oversupply also caused the price to drop from the demand side. The Regional Carrying Capacity (RCC) for the supply of rubber industry raw material was then conducted to assess the problem. The result of RCC calculation can be seen in Table 1.

The result shows that the regional capacity to supply the raw material was more than 1 (RCC index = 1.53) and this means that the raw material available exceeded the processing capacity of the industry. From the raw material’s side, the oversupply of RCC was not an issue since the raw rubber is not easily perishable, unlike palm oil that needs to be processed in a maximum 8 hours after harvesting. The oversupply affected the price from the demand side (industry). To increase the price at the farmer’s level and to increase the farmer’s bargaining power, the number of processing industry needs to be added.

The low rubber price subsequently brought in low income for the farmers. The low income affected the amount of money circulating in the rural areas and reduced the community’s affordability. This, in turns, impacted the economic activities in the areas. Based on the economic multiplier effect analysis in rubber development areas in 2014, the index was 0.65 which means that each Rp1 investment in rural areas caused Rp 0.65 to circulate in the areas for the next period. This was a decrease from the same analysis conducted in 2010 with an index of 1.83. This decrease shows that there was a deceleration of the rubber cultivation business which was generally caused by the shift of business to another commodity, which is palm oil. The same analysis was conducted in the same year for the oil palm development areas and the index was 3.43. This means that each Rp1 investment in palm oil caused Rp 3.43 to circulate in the areas. This also means that the farmers in the oil palm development areas had a better welfare from the increase of money circulation in the areas compared to the rubber development areas.

The economic multiplier effect index can be increased by developing the rubber industry. The development might help increase the competitiveness of the rubber farmers. However, counselling needs to be provided for the rural communities to raise awareness that rubber plantations still need to be preserved especially for lands with more than 15% slope which dominate western Riau. The shift of function for this type of land to oil palm plantations will increase the danger of erosion in the upstream areas.

3. Conclusion

Traditionally managing rubber plantations using simple methods without additional maintenance can only result in low productivities with around 738 kg/ha/year. This, along with lack of care during harvesting, also causes the low quality of the latex or the raw material for the rubber. The Regional Carrying Capacity (RCC) shows that the raw material available exceeds the capacity of the industry and also provides information on oversupply from the farmer’s side which in turn, affects the price from the demand side (industry). To increase the price at the farmer’s level, the number of processing factories needs to be added to increase the bargaining power of the farmers in rural areas.

The economic multiplier effect analysis in rubber development areas also shows that there was a decline in the index from 1.83 in 2010 to 0.65 in 2014. This decline shows that there was a deceleration of rubber cultivation business compared to the previous period which was caused by the shift of farming activities to another commodity, the more profitable palm oil commodity.

References


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