THE CONTRIBUTIONS OF RUBBER PLANTATION TO THE SOCIO - ECONOMIC DEVELOPMENT: A CASE STUDY ON KANIBONGAN PROJECT - RUBBER SMALLHOLDERS COMMUNITY IN PITAS, SABAH.

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ABSTRACT

Sabah is recognized as the poorest state in Malaysia, whilst having numerous rural communities categorized as a hardcore poor especially in the rural district, Pitas. The Kanibongan project involving rubber smallholders in the Pitas district has been developed by the State Government for the purpose of socio-economic development. The main objectives of this study were to determine the effectiveness of the project implementation in addressing the poverty level in the area involved; and to determine the factors driving the smallholders to participate in the project and the problems faced by these smallholders. This study involved five villages, namely, Kampung Masin, Kampung Kutoyon, Kampung Sulakulong, Kampung Simpang Empat and Kampung Simpang. Data was collected with 100% sampling comprising of 195 respondents by using questionnaires and interviews. Based on the results of this study, the average monthly income of the smallholders showed significant improvement up to 30% since its implementation. The main driven factors for smallholder participation in this project were self motivation (94.3%), subsidy incentives programme by LIGS (93.3%), poverty level (92.9%), good rubber prices (90.3%), and family encouragement (88.2%). Whereas the main problems faced by the smallholders were the unstable price of rubber (84.6%) and theft of latex (74.4%). The Kanibongan rubber planting project is considered successful in reducing poverty among the smallholders involved.

Key words: *Kanibongan project, rubber smallholder community, socio-economic development*

Introduction

Malaysia is the third largest rubber producer in the world, after Thailand and Indonesia (Heru & Andus, 2010; Sabah Rubber Industry Board, 2011). Rubber, *Hevea brasiliensis* is one of the first commodity crop planted in large scale in Malaysia, besides

cocoa, palm oil and tobacco (Chandrasekhar *et al.*, 2005). Rubber trees are a major producer of natural latex (Wongcharoen, 2011). Besides, latex rubber wood can be used for furniture and the main raw material in the production of wood-based panels such as particleboard and medium density fibreboard in Asia (Ayrimis *et al*., 2011), thus rubber is economically important (Prabhakaran, 2010).

Rubber plantation in Malaysia is divided into two main sectors, namely smallholder sector (≤ 40.48 ha) and plantation sector (≥ 40.48 ha) (Malaysia Rubber Board, 2006), where mostly are dominated by the smallholder sector (95.6%) (Ramli & Vanaja, 2011). In Sabah, there was an increasing on total area of rubber plantation since year 2008. This is due to the increasing of new planting and replanting application by the group of rubber planting scheme (Sabah Rubber Industry Board, 2011). The soil and climate suitability in Sabah, as well as promoting the rubber planting has widely become an important factor in the increasing of rubber plantation in Sabah (Heru & Andus, 2010). Sabah Rubber Industry Board (Lembaga Industri Getah Sabah/LIGS) is the Sabah State Government agency that responsible to the development of the rubber plantation in the state by giving assistant to the small farmers to ensure the implementation of the rubber planting. Sabah Rubber Industry Board have developed the rubber industry integrated management to the smallholders sector efficiently and increase the rubber production commercially, and diversify the downstream industry to be capable of competing in global markets (Sabah Rubber Industry Board, 2011). The rubber planting is using the new rubber clones that have better quality and disease resistance (Ang & Faera, 2011). The rubber planting is applying two main functions, which are to improve the income of smallholders and to use the idle land for the production of rubber wood and wood supply in the future (Malaysia Rubber Board, 2010).

Bengkoka project or Kanibongan Rubber Smallholders Community Project is located in Pitas, north of Sabah and was selected as the pioneer study site by the State Government because this area is one of the poorest areas in the country. Where, more than 73 percent of the population earns income through the practice of shifting cultivation. The project was developed with the main goal to reduce the poverty level and eradicate hardcore poverty by increasing the productivity of the idle land through sustainable management of rubber planting and other suitable agricultural crops (Sabah Rubber Industry Board, 2011). The main objectives of this study were; firstly to determine the effectiveness of the project implementation in addressing the poverty level in the area involved; and secondly to determine the factors driving the smallholders to participate in the project and the problems faced by these small holders.

Materials and Methods

The study area was located in Kanibongan Rubber Smallholders Community Project in Pitas, north of Sabah (Figure 1). The area consists of five villagers, namely, Kg. Masin, Kg. Kutoyon, Kg. Sulakolung, Kg. Simpang and Kg. Simpang Empat. The data was collected with 100% sampling comprising of 195 respondents by using a structured questionnaire through personal interview technique. All the respondents were categorized as a hardcore poor household by the Statistics Department, Pitas District (Sabah Rubber Industry Board, 2011), and actively involved in the Project. The questionnaire form were divided into four sections; Section A (Demographic information), Section B (Rubber planting status), Section C (Driven factors and the importance of rubber planting), and Section D (Problems encountered by the respondents). Respondents were asked to state the driven factors and problems encountered in their involvement in cultivation of rubber. The driven factors and problems encountered were valued by using Likert Scale. Factor analysis was used to get the significant value. The data obtained were statistically analyzed using Statistical Package for Social Sciences (SPSS) to obtained descriptive statistics; factor analysis was used to determine the significant value of the driven factors and problems encountered; and Paired T-test was used to determine the significant value of the effectiveness contributions of the project implementation in addressing the poverty level in the area involved.

Figure 1: The location of study area in Pitas, Sabah

Source: Sabah Rubber Industry Board (2011)

Results and Discussion

The total number of respondents interviewed was 195, comprising 79% males and 21% females. Majority of the respondents were Rungus (91%), and followed by others ethnic groups, namely, Bajau (2%), Sungai (1.5%), Dusun (1.5%), Chinese (1.5%), Kadazan (1%), Melayu Brunei (1%), and Suluk (0.5%). Majority were married (82%) and 84% were indigenous people. Their age was categorized into five groups. The largest group was 31-40 years old (32%), followed by 41-50 years old and above 50 years old (26% respectively), 21-30 years old (15%) and less than 21 years old (1%). The average household size was 4 persons, with the majority (33%) of them having 3 to 4 persons per household. About 60% of the respondents were educated but mostly were self-employed (71%), mainly in small scale farming.

Figure 2: Types of employment (before and after the involvement on the Kanibongan Project)

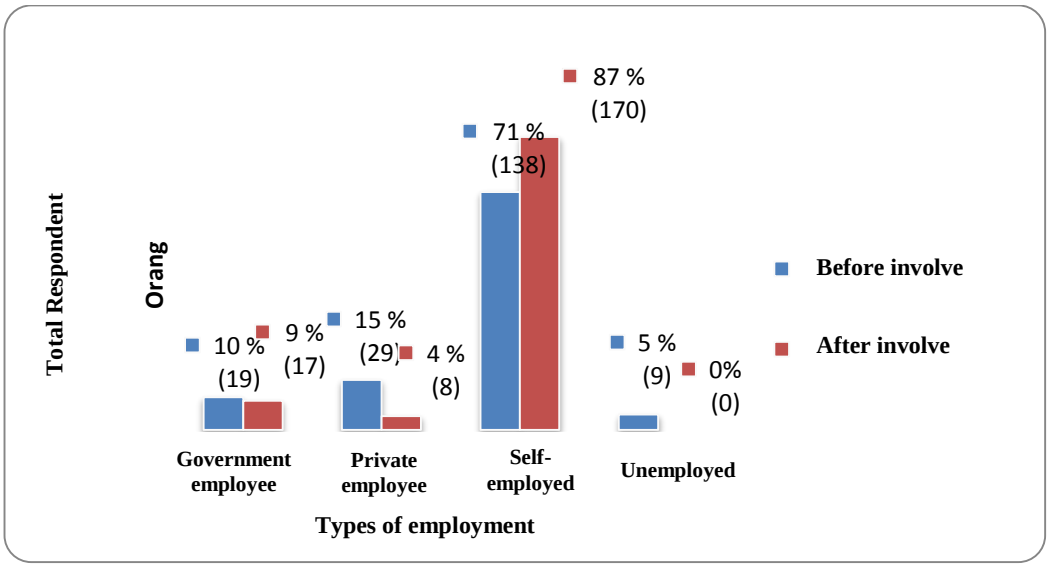

Figure 3: Average monthly revenue of respondent (before and after the involvement on the Kanibongan Project)

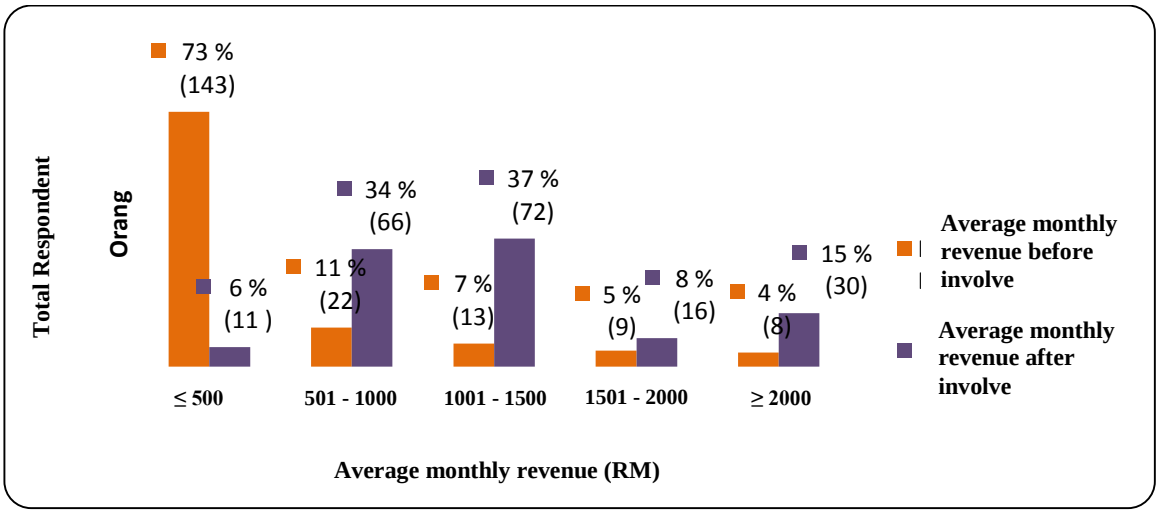

Figure 2 shows that there was a change in percentage over the transition of work among the respondents. A significant change on percentage was the transition of work from crops farmers (71%) to rubber farmers (87%) and give job opportunities to the unemployed respondents by 5%. In addition, 17% and 4% respondent working with government agencies and private agencies respectively have participated in the project with a purpose to increase their monthly income. This project also seems not only increase the average monthly income but can eradicate unemployment rate in the region. Based on the results in Figure 3, there were changes in the average monthly income after the involvement of respondents to the project. The average monthly income below RM500 has been reduced by 67%, while the monthly income of RM501 - RM1000, RM1001 - RM1500, RM1501 - RM2000 and the RM2000 were increased by 23%, 30%, 3% and 11% respectively. Paired T-test was used to determine the significance changes in monthly income earned by the smallholders involved in the project (Pallant, 2007). The Paired T-test results (Table 1) shows that there was a very significant change ($p < 0.05$) in average monthly income increment of the respondent involved. This indicates that the project has succeeded in increasing the monthly income of smallholder involved and reduced poverty level in the region.

Table 1: Paired T-test for average monthly income of the respondents (before and after involvement on the Kanibongan Project)

	t	df	Mean Difference	Std. Deviation	Std. Error Difference	Sig. Value
Average Monthly Income	19.80	194	1.39	0.98	.07019	0.000*

(*significant value at p<0.05)

The result has identified ten factors that have encouraged to the involvement of the respondents in the project (Table 2). Where seven as strong driven factors, namely, self motivation (94.3%), subsidy incentives programme by LIGS (93.3%), poverty level (92.9%), good rubber prices (90.3%), family encouragement (88.2%), the role of the government sector (78.9%), traditional practice (72.3%); while three other factors as less driven factors, which were the encouragement by friends (28.8%), and private sector (5.6%) as well as the role of the media (5.6%). On the other hand, there were six problems faced by the respondent during the participation in the project (Table 3). Two issues were considered as serious problems; an unstable price of rubber (84.6%), and theft of latex (74.4%); two problems were considered moderate serious problems which were the irregular rubber purchasing schedule by the buyer (51.3%) and scarcity of planting site (40.5%); and the other two problems were considered as less serious problems which were the lack of supervision after planting the rubber trees (7.7%) and difficulties in obtaining the rubber seedlings supply (3%).

Table 2: Driven factors on involvement of smallholders in planting of rubber

Driven factor	Level of importance				Mean score	Standard deviation
	1	2	3	4		
Self motivation	1.0 % (2)	5.6 % (11)	17.4 % (34)	76.9% (148)	3.68	0.63
Family encouragement	3.6% (7)	8.2% (16)	14.4% (28)	73.8% (144)	3.58	0.79
Encouragement by friends	49.2% (96)	22.1 % (43)	10.3 % (20)	18.5 % (36)	1.98	1.16
Good rubber prices	5.1 % (10)	4.6 % (9)	11.8 % (23)	78.5 % (153)	3.64	0.80
Subsidy incentives programme by LIGS	5.1 % (10)	1.5 % (3)	7.7 % (15)	85.6 % (169)	3.74	0.73
Poverty level	3.1 % (6)	4.1 % (8)	6.2 % (12)	86.7 % (169)	3.76	0.67
Traditional practice	24.6% (48)	3.1 % (6)	3.6 % (7)	68.7 % (134)	3.16	1.30
Role of government sector	10.3% (20)	10.8% (21)	5.6 % (11)	73.3 % (143)	3.42	1.04
Role of private sector	71.3% (139)	21.5% (42)	5.1 % (10)	0.5 % (1)	1.43	1.06
Role of media	71.3% (139)	21.5% (42)	5.1 % (10)	0.5 % (1)	1.24	0.66

(*Keiser-Meyer-Olkin* (KMO) = 0.80; Mean score values were significantly different at p<0.05); Level of Importance: 1- Not importance; 2- Less importance; 3- Importance; 4- Very importance; The values in parentheses represent the number of respondent.

Table 3: Problems encountered on involvement of smallholders in planting of rubber

Problem Encountered	Level of problems				Mean score	Standard deviation
	1	2	3	4		
Difficulties in obtaining seedlings supply	93.80% (183)	3.10% (6)	1.50% (3)	1.50% (3)	1.11	0.47
Lack of supervision after planting the rubber trees	85.20% (166)	7.20% (14)	4.60% (9)	3.10% (6)	1.26	0.69
Theft of latex	6.70% (13)	18.90% (37)	15.90% (31)	58.50% (114)	3.26	0.99

Irregular rubber purchasing schedule	41.00% (40)	7.70% (15)	6.70% (13)	44.6% (87)	2.55	1.40
Unstable price of rubber	3.10% (80)	9.20% (18)	6.70% (19)	77.90% (152)	3.63	0.78
Scarcity of planting site	53.30% (104)	6.20% (12)	8.20% (16)	32.30% (63)	2.19	1.37

(*Keiser-Meyer-Olkin* (KMO) = 0.64; Mean score values were significantly different at $p<0.05$); Level of problems: 1- No effect; 2- Less effect; 3- Moderate effect; 4- Serious effect; The values in parentheses represent the number of respondent.

Most of the smallholders were motivated to involve in rubber plantation because of the high profitable returns and promising lucrative income (Mohd. Koharuddin, 2005; Ahlheim *et al.*, 2015) and subsidy incentives programme by the LIGS (Sabah Rubber Industry Board, 2011). Thus, they are willing to plant rubber to raise their standard of living by maximizing the utilization of their land (Abdul Nassir & Mohammad, 2010). The theft latex problem faced by the smallhoders occured because of the rubber prices increases in the market (Sabah Rubber Industry Board, 2011; Kulwat & Hairul, 2011).

Conclusion

This study found that the average monthly income of the smallholders showed significant improvement up to 30%, provided employment by 5% and reduced poverty since its implementation. The main driven factors for smallholder participation in this project were self motivation, subsidy incentives programme by LIGS, poverty level, good rubber prices and family encouragement. Whereas the main problems faced by the smallholders were the unstable price of rubber and theft of latex. These issues gave negative impact on the development of rubber plantations in Sabah. Based on the results of this study, the Kanibongan rubber planting project is considered successful in reducing poverty among the smallholders involved and used the idle land for the production of rubber wood and wood supply for the state, country and global market in the future. The outcome of this study hopefully can be used as a reference or guidelines to the sustainability development of rubber plantations and improving the socio-economic of the rural communities in Sabah.

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