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## **DIVERSIFICATION OF ECONOMIC ACTIVITIES BY OIL PALM SMALLHOLDERS: A CASE STUDY OF KAMPUNG BUKIT BULAT, MELAKA**

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### **ABSTRACT**

Oil palm is one of the main farm crops in Malaysia and it contributes to the country's economy. Although oil palm sector creates more job opportunities but it's considered as a less profitable sector among the youngsters. A case study was conducted in Malacca to study and explore the diversity of the economics activities in Kampung Bukit Bulat in achieving the social, economic and environmental sustainability. The villagers are practicing the diversification of economic activities other than oil palm cultivation such as fishing pond, chili, banana farm, stingless bee, bird farm, FELDA chalet, handicraft, and traditional cookies. The study was conducted in a village named Kampung Bukit Bulat (Bukit Bulat Village), Alor Gajah, Malacca. A set of questionnaires was distributed to 30 respondents who are the permanent residents of the area. The data collected was analyzed using Software Package for Social Science (SPSS). Descriptive statistics and Chi-Square test were conducted to achieve the objectives of the study. The findings showed that the average income of the head of the family was RM2000 and farmers doing part- time work had their monthly earnings increased.

*Keywords:* Palm oil, Oil palm, socio-economic, chi-square test, farmer's income.

### **INTRODUCTION**

Sustainable development is the transformation of social and economy without compromising the future resources and needs. A sustainable agriculture is a common agricultural method which allows the use of resources in control and not compromising the future needs. According to Azima et.al (2013) a sustainable agriculture does not concern only on the environment, but also on the economic and social factors. Agriculture sector in Malaysia contributes to the nation's economy. The main crops cultivated are oil palm and rubber which are exported worldwide to support the national economic growth. Malaysia is the second largest palm oil exporter after Indonesia. Oil Palm is the main crop which helps smallholders and independent farmers earned extra income and contributed in upgrading their living standard. Malaysian government has taken an initiative to encourage the farmers by launching the Federal Land Development Authority (FELDA) which has helped increased the farmers' monthly income to RM 2,545 and decreased the level poverty to 8.4 percent in the year 2009 (Pelan Induk Pembangunan Luar Bandar, 2010), this finding is the result of a study conducted to survey the impact of oil palm plantation on the socio- economic of the farmers from

Kampung Bukit Bulat, Alor Gajah, Malacca. The main purpose of this study is to ascertain the extent of the oil palm plantation sector's impact on the village resident's standard of living in the areas of economic, social and environment. Based on the outcome of the study, the state government could encourage the local oil palm farmers and settlers in the particular village to be more productive. Kampung Bukit Bulat is a village in a rural area in Alor Gajah, Malacca that has been under FELDA since the year 1960. In the early days, there were Malays and Chinese residents but currently there are only around 650 Malay settlers. The village area is 436.55 hectares and 41 hectares is used for residential area. The oil palm has become the main plantation whereby 382.82 hectares are planted with oil palm trees. The main economic activity of the villagers is operated by individual or under the village cooperative such as farming (oil palm), banana trees, stingless bee, cattle, mini market, fish pond, manufacturing of cement ferro, handicraft and tourism. In the year 1790, Bukit Bulat Village Cooperative launched and focused on oil palm cultivation. The oil palm plantation supports the villagers to earn monthly income and some of the residents are able to earn extra income by doing part-time work. Bukit Bulat village has not only achieved economic success but also an impressive social participation.

### RESEARCH PROBLEM

The role of oil palm as the food and non-food sources and an increase in global demand had attracted many investors to venture into this sector. The main factor that has caused this sector to grow rapidly is the short period of time return on investment. However, this sector is also faced with challenges of supplying adequate and sustainable global cooking oil (Aki @ Zaki et al. 2015).

The country's ability to meet the world market demand depends widely on the productivity of oil palm plantation operators who are mostly smallholders or settlers. Other than that, the oil palm productivity depends on the age of the crop. As an effective method to obtain a bounty yield, the oil palm settlers are advised to replant the oil palm trees which aged 20 years or more. The hefty increase of production cost, fuel and wages has led to an increase in the cost of palm oil production and the shortage of crops. In addition, some plantations are facing problems such as lack of local labours causing the farm to rely on the foreign workers particularly during harvesting and conducting general maintenances in the farms. The local workers are showing less interest in working in the oil palm plantations due to low cost of wages and tiring work. In addition, Malaysia is facing limited land tenure for oil palm cultivation and rely on existing oil palm plantations. The oil palm crop is always threatened by the insects such as rhino beetles and Ganoderma diseases. A large-scale attack could impact the production of the oil palm because the trees which were attacked by the disease might be completely destroyed. Moreover, the weather factor plays a vital role in palm oil production. The high temperatures, drought and haze will negatively impact the production of the oil palm.

These factors are directly and indirectly giving negative impact to the oil palm settlers and smallholders. According to Robin Miller (2015), the smallholders' average monthly income is RM 1,356. However, this amount is not sufficient for Malaysian to face the rising cost of living. It is obvious that the farmers and smallholders have to practice diversity in their economic activities to face the nation's economic growth. As a mean of earning an extra monthly income, the smallholders and settlers are encouraged to practice various economic activities such as integrated farming.

In accordance with the government's effort to reduce the import of food, livestock rearing and other crops cultivation need to be increased which will be as profitable as the oil palm sector. Profitable plants or poultry cultivated in small scale requires a more secure research or market if it is to be transform into a large cultivation scale (Yusof B., 2011). The oil palm sector is able to produce other protein-based food and carbohydrate by integrating with other

crops such as banana, chilly, watermelon and others while waiting for the oil palm trees replantation. In fact, there are integrated livestock production such as cattle, goats and chickens in the oil palm plantation. The potential benefits of the livestock integration in the oil palm plantation is that it will help in the pest control. The agriculture and food production can be enhanced by the integration of crops and livestock in the oil palm plantations.

The Oil Palm industry's capabilities needs to be recognized and developed in future to be more sustainable and competitive. The vast agriculture land available in the country needs to be cultivated so that it will not become an idle land even though the country is transforming into an industrialized nation. As a conclusion, there is no other crops that is able to replace the oil palm in large scale, the oil palm is a more vital crop for the nation (Yusof B. 2011).

### **RESEARCH QUESTION**

The main research question is; how does oil palm cultivated in Kampung Bukit Bulat, Malacca and what is the economic activities diversity in Kampung Bukit Bulat to achieve the social, economic and environment sustainability? Kampung Bukit Bulat is a FELDA-based village whereby the residents are mainly oil palm settlers and farmers, however, the residents also practice various activities or businesses to increase their monthly income. This research will study about the diversity of the economic activities in Kampung Bukit Bulat.

### **RESEARCH OBEJECTIVE**

This study has two main research objectives derived from the research questions. The objective is to study and explore the diversity of the economics activities in Kampung Bukit Bulat in achieving the social, economic and environmental sustainability. The diversity of economic activities is other economic activities carried out by the villagers as an additional source of monthly income such as stingless bee, livestock production and others.

### **LITERATURE REVIEW**

Palm oil industry is the nation's main economic contributor which supports the hefty amount of need for food resources and human resources. In addition, oil palm sector is playing a vital role in the nation's investments, economics, research and development (R&D) and income generation. Participation of Malaysia in the Round Table for Sustainable Palm Oil (RSPO) with the Head Quarters (HQ) in Kuala Lumpur is a good platform to sustain the oil palm industry as an environmentally friendly sector. Bukit Bulat village has won many awards at the district, state, national levels and won the Malaysian Palm Oil Board (MPOB) awards as targeted crop achiever award.

According to Mazlan (2001), FELDA farmers are earning small amount of extra income from oil palm smallholders because FELDA produces good quality palm oil and is able to be sold at around RM100 per ton. Generally, the smallholders are facing problems in farming activities, including limited land size, poor crops' quality, poor equipment, and the lease system which contribute to the smallholders' financial crisis. In addition, less profitable job opportunities had discouraged the youngsters from FELDA to be involved in the oil palm plantations activities which led them to migrate to the city seeking for jobs in other sectors (Yahya Ibrahim, 1994).

According to Er et al. (2011), an ecological modernization in the palm oil production chain were tested by 4 hypotheses namely, i) policy formulation; ii) technology; iii) regulatory efforts; and iv) advocacy of preventive approaches. The findings of the study have proven that a better environmental performance is related to the environmental policy enforced, making companies strongly adhered to the preventive approaches enforced by government agencies. This study was conducted among 35 respondents.

Moreover, the palm oil sector does not only influence the country's economic stability, it also gives impact on the farmers' life. Palm oil plantation under FELDA supports farmers to earn a higher income compared to the individual oil palm plantation. FELDA does not only provide support for plantations, it also supports the villagers in their socio-economic aspect.

### RESEARCH METHODOLOGY

A total number of 30 respondents were selected from Kampung Bukit Bulat using the purposive sampling. According to Bailey (1978), sampling sizes of 30 respondents are considered accurate and valid for a study. This study uses the qualitative and quantitative approach. The primary data were collected using questionnaire as an instrument and interviews were also conducted to obtain extra information from the focus group discussion (FGD) with Kampung Bukit Bulat residents. The secondary data were collected by referring to past researches and published resources. The data collected were analyzed using Statistical Package for Social Sciences (SPSS). The result display descriptively (frequency, mean, median, mode) and also Chi- Square Test analysis.

### RESULT AND DISCUSION

The data collected were used to show the impact of oil palm plantation on the socio-economic aspect of Kampung Bukit Bulat residents.

#### RESPONDENT DEMOGRAPHIC

There are 25 male respondents (83.3 %) and 5 female respondents (16.7 %). The majority of the respondents are secondary school leavers (64.0 %) and there are 30 % tertiary institute leavers, only 3 % are primary school leavers and others. According to study, 21 respondents are having less than 5 family members while only one respondent has more than 10 family members. There are 18 respondents' (60%) with oil palm plantation as their main job while 12 respondents (40%) are planting oil palm as a part-time income. Bukit Bulat village residents are doing other works such as stingless bee farming, grocery shop, handicrafts and others even though it is under FELDA.

#### BACKGROUND AND PRODUCTION OF OIL PALM

This study was conducted in an oil palm plantation land owned by the Bukit Bulat villagers. According to the survey, majority of the respondents have their own land which belongs to their family and it has been used for plantation from generation to generation. There is a total of 22 respondents (73.3 %) who are working on their family lands. On the other hand, there are 3 respondents (10.0 %) who are working on their own land and planting on governments land are respectively. A respondent, Mr. Alang (not his real name), who has been living in Bukit Bulat Village for 40 years after marrying his wife who is a resident of Bukit Bulat. He added that, he has his own land and he is cultivating oil palm as the main crop assisted his son. There is only one respondent (3.3 %) who is using the lease land and other lands which was taken by some villagers to be used for their farming purposes.

**Table 1**

*Type of land*

Type of Land	Frequency (No. of respondents)	Percent (%)
Own land	3	10.0
Land belongs to the Family	22	73.3
Lease	1	3.3

<b>Government</b>	<b>3</b>	<b>10.0</b>
<b>Others</b>	<b>1</b>	<b>3.3</b>
<b>Total</b>	<b>30</b>	<b>100</b>

Based on the respondents, information, recently there is no Fresh Fruit Bunch (FFB) produced as a result of oil palm exploration in Bukit Bulat village that is replanting the oil palm trees. The most recent crop production data obtained is for the year 2013. An average monthly production volume of FFB for the year 2013 are 9 respondents (30.0 %) produced 6-10 tons of oil palm, 3 respondents (10.0 %) are harvesting an average of 0-5 tons of palm oil. There are a few respondents who were really sure or concern about the quantity of palm oil being harvested in their farm. There were 18 respondents who do not know the average production of FFB in their farms. Based on the interviews, it shows that most of them were not very concern about the production but are concentrating on the planting of the crop and harvesting, while the administration and accounts are controlled by their sons or grandchildren who are helping them in this business.

**Table 2***Average production of FFB per ton per month*

<b>FFB (Ton)</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>0-5</b>	<b>3</b>	<b>10.0</b>
<b>6-10</b>	<b>9</b>	<b>30.0</b>
<b>Do not Know</b>	<b>18</b>	<b>60.0</b>
<b>Total</b>	<b>30</b>	<b>100.0</b>

Table 3 shows the average price of a ton FFB sold by the respondents. There are 5 respondents (16.7 %) who sold their crops at RM400.00 – RM600.00 while 3 respondents (10.0%) sold at RM600.00 or above for a ton of FFB. However, 22 respondents (73.3 %) do not know the selling price of a ton of FBB because the price is managed by the Bukit Bulat village Oil Palm Cooperative. There are many factors affecting the price of FFB, the main factor stated by the farmers are the high temperature which always influences the price the FFB. In addition, farmers also added the replanting practices which will reduce the earning while waiting for replanting to be harvested at least for 3 years.

**Table 3***Average Price for FFB*

<b>Price (RM)/TON</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>RM 400.00-RM 600.00</b>	<b>5</b>	<b>16.7</b>
<b>More than RM 600.00</b>	<b>3</b>	<b>10.0</b>
<b>Do not know</b>	<b>22</b>	<b>73.3</b>
<b>Total</b>	<b>30</b>	<b>100.00</b>

Table 4 shows the average source of monthly income from oil palm. There are 13 respondents (43.3 %) who were earning RM501-RM1500. According to a respondent, he owns a grocery shop at Kampung Bukit Bulat and it becomes his main source of income while the income from oil palm crops is his extra income. He added that he is using his parents' land and he have no sufficient time and labours to work on his land. On the other hand, 11 respondents (36.7 %) were earning RM 1501 – RM 2500 per months while 4 respondents (13.3 %) earned RM 3501 – RM 4500 per month. However, only 2 respondents (6.7 %) earned RM 2501 – RM 3500 per month. According to the President of the Village Cooperative, the income from oil palm in Kampung Bukit Bulat is not stable since the price per ton of FFB depends on the

international market and the oil palm production is easily affected by the weather, diseases and shortage of labours.

**Table 4**

*Average source of income from oil palm*

<b>Income (RM)</b>	<b>Frequency</b>	<b>Percentage</b>
<b>RM 501 - RM1500</b>	<b>13</b>	<b>43.3</b>
<b>RM 1501- RM2500</b>	<b>11</b>	<b>36.7</b>
<b>RM 2501- RM 3500</b>	<b>2</b>	<b>6.7</b>
<b>RM 3501-RM 4500</b>	<b>4</b>	<b>13.3</b>
<b>Total</b>	<b>30</b>	<b>100.00</b>

Table 5 shows the farmers average income earned from other economic activities besides the oil palm cultivation. The villagers are practicing diversification of economic activities such as fishing ponds, chili farm, banana farm, bird farm, stingless bee farming, handicraft, mini chalet (in FELDA design) and traditional cookies. There are 11 respondents (36.7 %) who were earning RM501- RM 1500 monthly as an income from other activities such integrated farming while 7 respondents (23.3 %) were earning RM500 and below from other economic activities. A respondent named Mrs.Rahmah states that she is earning around RM130.00 per month by selling chicken and duck eggs. In addition, there are 5 respondents (16.7 %) who were earning RM 1501- RM 2500 and RM 3501 –RM 4500 respectively. However, only one respondent (3.3 %) was earning RM2501-RM 3500 monthly as a basic income while one respondent (3.3%) was not earning from oil palm because his main business is grocery shop and mini market. However, a few respondents are not really depending on other economic activities, they are carrying out rearing of livestock as their part time economic activity. The findings show that, the income from other activities encourage the villagers to earn extra income and concurrently, it supports the integrated farming which is offers an easier easy way for the villagers to earn their income and overcome poverty. It also enables the villagers to achieve sustainability in the social, economic and environmental perspectives.

**Table 5**

*Source of income from other diversification activities*

<b>Monthly Income (RM)</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>500.00 and below</b>	<b>7</b>	<b>23.3</b>
<b>501.00 -1500.00</b>	<b>11</b>	<b>36.7</b>
<b>1501.00 -2500.00</b>	<b>5</b>	<b>16.7</b>
<b>2501.00 -3500.00</b>	<b>1</b>	<b>3.3</b>
<b>3501.00-4500.00</b>	<b>5</b>	<b>16.7</b>
<b>None</b>	<b>1</b>	<b>3.3</b>
<b>Total</b>	<b>30</b>	<b>100.0</b>

According to the village cooperative, Kampung Bukit Bulat Villagers are practicing various activities to earn extra income. There is a fish pond named Wahita Joran and it is an attraction point of this village. This pond has various types of fishes such as *Tongsan*, *Patin* and others. Fishing competitions were organized offering cash prizes for the winner. There is a half an acre chili farm run by two friends. FELDA provides the reserved land for chili farms to help the villagers earn extra income. The stingless bee farming is very famous in Kampung Bukit Bulat due to its sweet and sour taste. It contains phenolic acid which is more beneficial to human, rich in nutrition for beauty, health and energy. The stingless bee produces raw honey

which is sold by the villagers. In addition, Kampung Bukit Bulat is a great place for bird lovers to spend time with local birds, hear the birds singing and take photos. Visitors can purchase the birds from the farm to make as their pet. Kampung Bukit Bulat is not only an attractive place to visit, it also provides chalet services for the tourists to spend their nights at the village. The chalet is design according to the mini FELDA themes by transforming the empty houses in that village into chalets. The chalets' surrounding is very clean with fresh air and it is very peaceful. The village has a banana farm with a few types of local bananas such Cavendish. According to villagers, banana is a suitable crop for their village climate and planted in the oil palm plantations. Selling of handicraft is one of the main tourist attraction. In this village, the handicraft activity is encouraged due to sufficient natural resources. They created handicraft items using bamboo, wood and others. This activity is mainly carried by the female residents to help increase their household income. Often, handicrafts selling campaigns are organized by the village authorities to attract tourists and help the local sellers to promote their handicrafts at FELDA Machap, Kampung Bukit Bulat. Kampung Bukit Bulat has its own traditional cookies which is an attractive item to attract tourists. There are two type of cookies called *Kuih Bangkit Cheese* and tart produced by one of the villagers and has the potential to be marketed widely among the tourists. These activities are listed as diversification of economic apart from the oil palm cultivation. Although Kampung Bukit Bulat is mainly an oil palm-based village under FELDA, the smallholders and settlers or farmers are very hardworking to earn extra income for their family. Definitely, these various activities will support the villagers to obtain social, economic and environmental sustainability.

### CONCLUSION

A survey was conducted among 30 oil palm smallholders from Bukit Bulat village, Alor Gajah, Malacca to study the oil palm plantation in that village. The villagers are carrying out other activities to stabilize their economic status apart from cultivating oil palm. Economic activities carried out individually or by the cooperative are oil palm cultivation, banana farming, cattle breeding, stingless bee breeding, retailing, grocery shops, fish breeding, ferro cement industry, handicraft and tourism. According to the study, an average income for the head of household in the village is estimated at RM2000. Mostly, the oil palm plantation and its management are controlled by the village cooperatives, so the smallholders carry out other work to increase their family income.

The cooperative was established in 1970 to improve and support the increase of the villagers' income which was mainly focusing on oil palm plantations. In the year 2003, Bukit Bulat village participated in the Sustainable Village Programme under the Ministry of Rural and Regional Development and was selected based on several economic activities such as plantation services and development, fishery, stingless bee breeding, tourism (FELDA style chalet and homestay). In the year 2005, Bukit Bulat village Cooperative had earned an annual profit of more than RM 1.5 Million a year and provides 20 job opportunities for the villagers. In a nut shell, the palm oil industry has been fully controlled and managed by the cooperative. Moreover, the findings show that the farmers still have their own well-developed knowledge and skill in oil palm crops and plantations. Furthermore, the villagers have started practicing diversification in their economic activities by carrying out various businesses apart from oil palm cultivation. The activities involved in the economic diversification are stingless bee farming, chili farm, banana farm, handicraft, traditional cookies, fish pond, bird farm and others. According to the findings, the villagers earned extra income from other activities even though their main source of income is oil palm cultivation. It is advisable for the villagers to be open minded in exploring various economic activities rather than depending on a single source of income. By earning extra income, their living standard will be upgraded and the

socio-economic status will progress positively. In addition, the villagers' involvement in multi-economic activities will enable them to achieve the social, economic and environmental sustainability in a short period of time. Bukit Bulat village will continue to develop as a sustainable village while improving the oil palm plantation in the sustainable way and applying the latest technology so that the smallholders can progress and improve their socio-economic rapidly.

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