

## ECONOMIC SUSTAINABILITY OF PALM OIL PLANTATIONS AMONG SMALLHOLDERS IN LAHAD DATU, SABAH

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### ABSTRACT

This study examines the economic sustainability indicators of oil palm smallholders in Lahad Datu, Sabah. A survey based on a set of questionnaires with 58 smallholder respondents were carried out. The findings indicated that majority smallholders have income above the poverty income level. The income earned by the smallholders can be considered as sustainable as they initiate measures to ensure that their agricultural activities are carried out via sustainable practices. The respondents spend within their income limit and have savings. They attended training programmes and the skills gained can help to enhance their efficiency and skills in their cultivation.

**Keywords:** Economic sustainability; Palm oil plantations; Smallholders.

### 1. INTRODUCTION

The palm oil sector has become one of the main pulses of the Malaysian economy. This can be evidenced by the rise in the oil industry's performance for the year 2010 with export revenues of oil products valued at RM59.77 billion compared to RM49.59 billion in 2009 [1].

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Oil palm cultivation in Malaysia was introduced by the government to eradicate poverty among the rural population. In 1960, the Federal Land Development Authority (FELDA) opened up new areas for the cultivation of oil palm plantations. The government had set up several agencies responsible for matters relating to the cultivation of oil palm. The Department of Agriculture, which was established in 1912, was assigned to implement agricultural policies that were outlined by the government. The Malaysian Palm Oil Board (MPOB) was instrumental in promoting and introducing the benefits and usages of palm oil to the world.

### **1.1 Problem Statement**

Sustainable agricultural practices are important to ensure a balance of three key components of the concept of sustainability, namely economic, social, and environment. The indicators of sustainable agriculture in oil palm should be identified so that those involved in this sector can increase their investment in sustainable practices at higher levels. Therefore, sustainability in agricultural development is not just in relation to the environment, but the concept has to be inclusive and not isolated from the economical and social factors. Hence, the concept of sustainability in Malaysia is based on three main objectives, which are economical sustainability and profitability, environmental awareness, and social acceptance [2].

In today's era, financial issues are the main concern of smallholders. Malaysia, in its efforts to make the nation a matured producer of sustainable palm oil, must consider at not only the level of large-scale plantations, but also the smallholders.

### **1.2 Research Objectives**

The objective of this research is to identify the economic sustainability indicators of oil palm smallholders in Lahad Datu, Sabah.

### **1.3 Literature Review**

Norlida Hanim [3] conducted a study on the impact of tourism on sustainable living among the aboriginal communities in Kg. Sg. Ruil, Cameron Highlands. In this study, the researchers adopted a number of indicators to measure sustainable living, which was developed by the United Nations Development Programme [4]. Among the indicators used are human assets, financial assets, physical assets, social assets, and risks or threats to lives of the indigenous

communities. The study found that the benefits of tourism development in Cameron Highland were also enjoyed by the natives through the acceptance of a positive impact in terms of improvement in human assets, physical assets, and social assets.

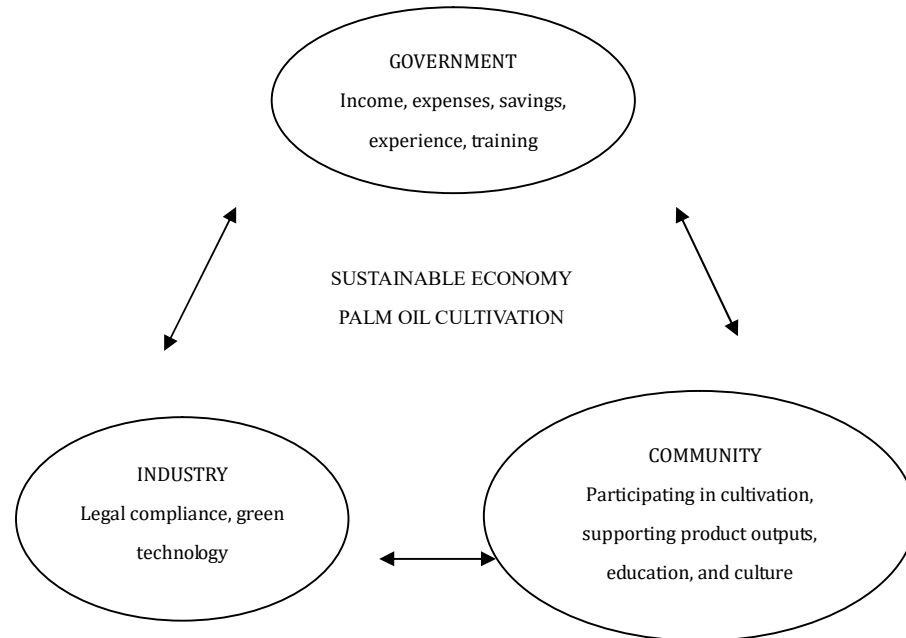
Anna [5] studied the relationship between the level of income and sustainable livelihood. Livelihood includes the ability, assets, and activities required for living purposes [6]. According to Bhandari, B.S, and Grant, M. [7], the basic indicators of livelihood and consumer levels include the threat of insecurity, lack of rights as a member of the household, the lack of rights in voicing out opinions in the community or the government, the level of health, literacy and education, access to assets, and others. The study was aimed at having a conceptual discussion regarding the relationship of income levels and the sustainable livelihood of the household. To achieve a high-income level, households will use the existing assets by choosing a strategy of income diversification in order to achieve positive life outcomes. This strategy will help an individual to improve his/her income level and reduce the risk of threats, especially among the low-income households.

Azima A.M [8] found that the involvement of the local residents in the development of agriculture in the Kuala Pilah districts, Negeri Sembilan was an important determinant of sustainable agriculture. The findings of the research revealed that the low level of education has led to the low level of influence in the involvement of the local residents. In order to increase sustainable agricultural practices among the farmers, the educational level of the farmers need to be enhanced.

### **1.3 Economy in Brazil**

A conceptual framework has been established based on literature reviews, whereby the conceptual framework clearly describes the sustainable agriculture indicators, with focus on the sustainability indicators in oil palm cultivation.

The indicators of sustainability are aimed at describing and measuring the relationship among the three main components, namely economy, social and environment as well as the balance of the three components. This is because it can lead to the achievement of sustainability development goals required for the common good.



**Fig.1.** Conceptual Model of the study

Source: [9][10][11][12][13][14]

In this study, the concept of sustainable agriculture has been adopted to develop sustainability indicators. Hildebrand [15] has proposed that sustainability of agricultural systems is the ability to persist in the long term. The concept of sustainable agriculture has a multi-dimensional nature that is ambiguous and difficult to measure. To achieve sustainable cultivation, cooperation among various parties is also very important, especially the government and the industry stakeholders. Thus, according to Er [12] three main stakeholders, namely the government, the industry, and the community play an important role in the achievement of sustainable agriculture practices. These components are shown in Fig.1.

Titenberg [16] and Pezzey [17] claimed that the concept of sustainable development not only has economic and environmental dimensions but also has a social dimension. As for the aspect of economic sustainability, the farming system requires a need for economic production. Therefore, the creation of a system requires the maintenance of harmony in terms of the environment and the preservation of environmental resources. In addition, the increase in revenue in prudent manner should also be taken into account by reducing the use of land, labor, and chemicals [18]. Meanwhile, in terms of inputs, it must comply with the characteristics of

sustainability that are able to create sustainable economic benefits. The use of sustainable inputs will make the agricultural practices among farmers to be more sustainable resulting in greater benefits in upgrading their economy.

By doing so, the government would help to improve the income of smallholders by supplying them with various kinds of aid. With assistance from the government, smallholders are able to obtain upfront capital to initiate their cultivation. In addition, the government helps smallholders to develop sustainable palm cultivation through the Malaysian Palm Oil Board Fund. The government has provided the Smallholders Palm Replanting Scheme to farmers who want to initiate their cultivation. For those who do not have experience in the cultivation of oil palm, the government also provides training on plantation techniques so that they are able to earn a steady income.

After the planting phase, green technology is required to achieve sustainable agriculture among the smallholders. The green technology has helped smallholders to clean the waste from the palm trees and to generate new products in the form of biogas, organic fertilizer, and clean water. The use of green technology not only helps preserve the environment but also improves the economics of oil palm cultivation.

## 2. RESULTS AND DISCUSSION

### Economic Sustainability Indicators of Oil Palm Cultivation

In Tables 1 and 2, the economic sustainability of the respondents were identified based on a number of economic sustainability indicators that have been identified. In this section, the respondents must answer 10 items to allow the researchers to analyze the data in order to achieve the objectives.

**Table 1.** Income and Expenditure

Details	Number of (n=58)	Percentage (100 %)
<b>Income from Oil Palm</b>		
<630	13	22.4
631-1050	16	27.6

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1051-2000	24	41.4
2001-3000	4	6.9
4001-5000	1	1.7
<b>Income from Non-Oil Palm</b>		
None	31	53.4
<630	9	15.5
631-1050	8	13.8
1051-2000	6	10.3
2001-3000	2	3.4
5000>	2	3.4
<b>Total income</b>		
<630	4	6.9
631-1050	14	24.1
1052-2000	28	48.3
2001-3000	10	17.2
5000>	2	3.4
<b>Source of Income besides Oil</b>		
<b>Palm</b>		
None	31	55.2
Bus driver	1	1.7
Clerk	1	1.7
Self-employed	1	1.7
Pension Allowance	1	1.7
Imam of Mosque	1	1.7
Farming	3	5.1
Part-time job	1	1.7
Private sector job	4	6.8
Grocery store worker	7	12
Fisherman	1	1.7

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Security Guard	2	3.4
Services	1	1.7
Vehicle rentals	3	5.1
<b>Expenditure</b>		
<630	22	37.9
631-1050	16	27.6
1051-2000	17	29.3
2001-3000	2	3.4
4001-5000	1	1.7

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Source: Fieldwork (2015)

Table 1 shows the five items of economic sustainability indicators, namely income from oil palm, , income from the non-oil palm, total income, sources of income other than oil palm and monthly expenditure of the respondent smallholders in the study area. The income measurement is based on the poverty measurement of the household's gross income per month according to the Poverty Line Income (PLI) issued by the Malaysian government. For residents of the state who have an income of less than RM630, this group will be included in the hardcore poor. While for those who have a total income of between RM631 to RM1050 are included amongst the poor. To be out of poverty, people in the state of Sabah should have monthly income exceeding RM1050.

A total of 24 respondents (41.4 percent) earn between RM1,051 to RM2000. This is followed by 16 respondents (27.6 percent) with monthly income of between RM631-RM1050. For the lower income groups, 13 respondents (22.4 percent) have an income of RM630 per month out of the total income. Meanwhile, 4 respondents (6.9 percent) earn between RM4001 and RM5000. On an overall basis, the lowest income obtained by smallholders from oil palm is RM200, whilst the highest income is RM 4000.

The majority smallholders have made oil palm cultivation as their main job to earn money and sustain their livelihood. This resulted in them spending within their income earned from oil palm cultivation so as to ensure that their income is sufficient to spend on daily necessities

such as cooking products, education, and health, as well as utility bills and hire purchase requirements.

In addition, a total of 22 respondents (37.9 percent) have expenditures under RM630. This is followed by 17 respondents (29.3 percent) who incur expenses between RM1,051 and RM2000. This percentage is not very different from those who spend between RM630 and RM1050 at a total of 27.6 percent, representing 16 respondents. For those who incur expenses of between RM2001 and RM3000 and RM4001 to RM5000, each had 2 respondents (3.4 percent) and one respondent (1.7 percent), respectively. There are several factors that lead respondents to not spend a lot mainly due to the attitude of those who like planting vegetables and fruits in their backyards. Meanwhile, since the study area is near the sea, seafood is easily available and some even adopt fishing as their hobby. This situation, to certain extent, has reduced their daily expenses

**Table 2.** Savings, Experience, and Training

No	Details	Number of (n=58)	
		Yes (%)	No (%)
1	Have a savings	39 (67.2%)	19 (32.8%)
2	Experience gained can improve the skills and efficiency in cultivation	56 (96.6%)	2 (3.4%)
3	Attend training to improve the production of palm oil plantation	30 (51.7%)	28 (48.3%)
4	Training can improve the efficiency and skills in the cultivation of oil palm	32 (55.2%)	26 (44.8%)

Source: Analysis of survey from fieldwork (2015)



Table 2 indicates the economic sustainability indicators based on savings, experience, and training. The results indicated that 39 respondents (67.2 percent) respondents have savings or deposits, whilst the 19 respondents (32.8 percent) do not have any savings. 90 percent of the respondents chose banks as the main medium for saving money whilst 2 respondents (5 percent) save in trust funds, and 1 respondent (2 percent) respectively save in shares and fixed deposit. The habit of saving is practiced by them due to the high level of awareness that savings would ensure a bright future.

56 respondents (96.6 percent) agreed that the experiences gained in the cultivation of oil palm could help to improve their skills and competencies in the cultivation activities. Training programmes and guidance were obtained from agricultural agencies such as the Malaysian Palm Oil Board (MPOB) and the Department of Agricultural.

When asked if the training or courses taken enhanced their skills and competencies in the cultivation of oil palm, a total of 32 respondents ( 55.2 percent) answered yes, while 26 respondents (44.8 percent) answered no. Some respondents claimed that the training could, to some extent, helps in upgrading their skills, especially in improving the oil palm output. With the training they received, they are more exposed to the latest technology especially in the use of high quality fertilizer as well as the use of the latest technology which can improve the productivity of oil palm. As for those who said no, the training they received was not consistent with their conventional ways. Although they attended various trainings, they still carry out their cultivation activities using the old way. The most powerful factor was that they were more comfortable with the old way compared to adopting new ways in which they need to take time to understand the new methods. This condition usually occurs among the more elderly citizens.

### **3. CONCLUSION**

Economic sustainability is one of the indicators that are important to ensure that smallholders can survive in an increasingly challenging world. Stability in their earnings allows oil palm smallholders and their household members to pursue their livelihood in terms of fulfilling basic needs and other necessities. In terms of spending, most of the respondents spent within their income limits.

The experience and training among respondents was also at a sustainable level. Someone who has long been engaged in oil palm cultivation will improve their planting skills. The exposure and experience will enhance their skills, highly knowledgeable in their work and help them to solve the job problems quickly. They will be more efficient in carrying out future job activities. Agencies often use the medium or the method such as courses, training, briefing, and informative seminars regarding planting activities to enhance the knowledge and skills of the oil palm smallholders. These methods are used to encourage the smallholders to adopt modern agriculture, which can increase their income from oil palm cultivation, as well as to increase their overall income.

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#### 5. REFERENCES

- [1] Berita Harian. (2012). See also URL <http://www.beritaharian.com.my>, January.
- [2] Faridah, A. (2001). Sustainable agriculture system in Malaysia.
- [3] Norlida Hanim, Redzuan, O., Siti Hajar, I., Abdul Hamid, J., Doris, P. (2012). Kesan Pembangunan Pelancongan terhadap Kelestarian Kehidupan Komuniti Oran Asli Kg. Sg. Ruil, Cameron Highlands. Proceeding PERKEM VII, Vol 2: 1200-1214.
- [4] United Nations Development Programme (UNDP). (2005). Sustainable Livelihoods Approaches. Guidance Note 10.
- [5] Anna, Doris, P. & Norlaila, A.B. (2011). Tingkat pendapatan dan kehidupan lestari: Kerangka konseptual. Proceeding PERKEM VIII Vol 2: 27-37.
- [6] Tacoli, C. 1999. Understanding the opportunities and constraints for low-income group in the peri-Urban interface: The contribution of livelihood frameworks. The Development Planning Unit, London.
- [7] Bhandari, B.S. & Grant, M. (2007). Analysis of Livelihood Security: A Case Study in the Kali-Khola Watershed of Nepal. Journal of Environmental Management 85: 17-26.

- [8] Azima, A.M., Er, A.C., Suhana, S., Sivapalan, S., Novel L., Mohd Yusoff, H., Fuad, M.J., Zaimah & Sarmila. (2013). Keterlibatan Penduduk Lokal dalam Pembangunan Pertanian: Kajian Kes di Daerah Kuala Pilah, Negeri Sembilan. *Malaysia Journal of Society and Space* 9 Issue 1: 24-33.
- [9] Buttel, F.H. (2000). Ecological modernization as social theory. *Geoforum* 31, 57-65.
- [10] Mol, A.P.J. (1995). The refinement of production: Ecological modernization theory and the chemical industry. Jan van Arkel/ International Books, Utrecht.
- [11] Murphy, J. (2000). Editorial: Ecological modernization. *Geoforum* 31, 1-8.
- [12] Er, A.C. (2007). A quantitative methodology to test ecological modernization theory in the Malaysia context. PhD Thesis, Wageningen University, The Netherlands.
- [13] Er, A.C. (2009). Prestasi alam sekitar rantai industri tekstil dan pakaian di Malaysia: Faktor dorongan daripada perspektif pemodenan ekologi. *Geografia-Malaysian Journal of Society and Space* 5(3), 44-56.
- [14] Er, A.C. (2010). Ecological modernization theory: The milieu for theoretical framework. In collection Kamarulnizam, A., Sivapalan, S., Marlyna, M., Er, A.C. (eds) Contemporary issues of educational, development and security, pp. 90-128. UKM, Bangi.
- [15] Hilderbrand, P.E. (1990). Agronomy role in sustainable: Integrated framing systems. *Journal Production Agriculture* 3: 285-8.
- [16] Titenberg, T. 1984. *Environment and Natural Resource Economics*, Scott, Foreman and Co, Glenview.
- [17] Pezzey, J. (1989). *Economics Analysis of Sustainable Growth and Sustainable Development*, World Bank Environment Department Working Paper No.15, Washington, D.C.
- [18] Wan Izzulhilmi. (2014). Kesedaran Pertanian Lestari dalam Kalangan Peneroka Sawit: Kajian di ladang Felda Jerangau, Dungun. Fakulti Sosial dan Kemanusiaan, Universiti Kebangsaan Malaysia, Bangi.

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