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Oil Palm Smallholders and Its Sustainability Practices in Malaysia

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Abstract

The demand for Palm oil has increasing over the several decades and it has led to criticisms and question about sustainability on biodiversity loss, water pollution and deforestation. This study aims to explore the sustainability of oil palm smallholders in Malaysia based on environmental, social and economic perspectives. The aim of the study is to examine the sustainability of smallholding scheme in Malaysia. A questionnaire survey was conducted with 50 smallholders in Terengganu state under the Federal Land Development Authority of Malaysia (FELDA). It's revealed that most of the smallholders have sufficient knowledge of sustainability consistent with Roundtable on Sustainable Palm Oil (RSPO) and other local agricultural laws practices. The study also indicates that on social aspect, the smallholders have better quality of life through the provision of basic facilities. The study concludes that there is a high degree of sustainability amongst oil palm smallholders under the management of FELDA.

Keywords: *Oil palm, sustainability practices, smallholders, FELDA, Malaysia.*

1. Introduction

Oil palm is the leading oil crops in the world. It provides more than a quarter of global oil consumption. Oil palm accounts for approximately 60 percent of the global oil trade (World Bank 2010). Its demand has led to increase in cultivation not only in Indonesia and Malaysia - the two biggest producers - other regions of the world have started the cultivation. Oil palm is currently cultivated on approximately 15 million hectares of land globally (FAO 2009, Fitzherber & others 2008; Koh & Ghazoul 2008; Koh & Wilcove 2008a). The oils extracted from the palms are both used in food manufacturing as well as in non-food industries. These include; soap making, detergents, and biodiesel production and others. The demand for palm oil, both for food industries and biodiesel means more lands cleared and primary forests converted to plantations; and this trend is expected to continue in the next several years. As a major source of food and non-food industries, it accounts for more than 28 million tons of world's annual 95 million tons of vegetable oils (RSPO, 2006). In 2004/2005, its application in food products was estimated at 74 percent; lower than 83 percent production in 2000/2001, nonetheless, its industrial application increased to 18 percent compared to 7 percent for food (USDA, 2005). It is projected that the demands for vegetable oils will increase to about 184.3 million tons in 2019/2020 – with palm oil in the lead. In 2011/2012, palm oil accounted for 57.7 percent market shares of fats and oils and it is projected to remain the same in the coming years.

Oil palm was first introduced into the country by the British as an ornamental plant in 1875, its commercial cultivation took place only in 1917 in Tennamaran Estate, Selangor. Nonetheless, large-scale cultivation of oil palm only started in 1960s following Malaysian Government's decision to diversify its agricultural lands than to rely on rubber which its price fluctuating at that time. Oil palm commercialization lead to large tracks of rubber lands cleared to make way for

palms and this trend has continued for over three decades (Sehkar 2000). From 55,000 hectares in the 1960s, Malaysia today has more than 5.08 million hectares of planted areas spread across the country with west Malaysia accounting for 55 % of the total, while Sabah and Sarawak combined account for 45 % (MPOB, 2014). Malaysia is only second to Indonesia in palm oil production.

Malaysia's oil palm industry is dominated by the private estates, accounting for 60%, with 40% under the small holding scheme. The small holding scheme in the country is led by the country's federal land development authority (FELDA) established in 1956. It accounts for 29 percent of all smallholders in the country with remaining 11 percent under the independent smallholders. The main focus of FELDA at its inception was to diversify the agricultural sector in the country as one way to reduce poverty among the landless families. The participants in the scheme were granted land title; a 4 hectare plot, a house, and a garden plot located within a larger management block of land, with FELDA providing the physical infrastructure, management, and advisory guide. FELDA also provided credits, inputs, including oil palm seeds, fertilizers, pesticides and the marketability of the crops. The settlers in turn worked on an individual piece-rate basis and participated as equal owners with no rights over any particular plot of land. FELDA over the years have restructured to accommodate the changing trends in palm oil business. FELDA management of settler schemes has remained, with new lands developed into 'non-settler' plantations owned by its subsidiaries and worked by laborers who earn wages and bonuses at similar rates to private plantations. Most of the workers are immigrants, and are employed on mainly contractual basis. Nearly 40% of FELDA's total plantation area of 750,000 hectare is now managed under non-settler arrangements. FELDA continues to own a large part of the chain of production in Malaysia's palm oil industry, with 72 mills and seven refineries (FELDA 2006). Through FELDA, poverty in the main agricultural sector saw a significant reduction from the 1970- to- 1979 (from 68.3 % - to- 11.8 %) and poverty among the oil palm smallholders was the lowest compared to other agricultural subsectors, as a result of high yields and the expansion policy of the government (Arif & Tengku Mohd Ariff 2001, Dompok 2010).

The expansion policy nonetheless, often times have occurred at the expense of forest areas, peat lands, and local peoples' customary lands, contributing to loss of natural forests, loss of biodiversity, ecosystem degradation, anthropogenic climate change, loss of traditional livelihoods and increasing land conflicts (WWF 2008, Colchester et al 2006). Malaysia as palm oil producers is among the 14 countries with annual deforestation rates in excess of 250, 000 ha per year (Wood 1990), as a result of the expansion of oil palm plantation and the Timber industry. Koh and Wilcove (2008) state that from 1990-2005, approximately 60 % of the oil palm expansion in Malaysia was at the expense of forest conversion. The challenge is how the industry can strike a balance between expansion to meet demands and enhance economic growth, and at the same time protect and conserve the environment while meeting its social responsibility. When peat-lands are burned and cleared for plantation, we risk greenhouse gas emission and when forest lands are converted to plantation we face biodiversity loss as plantation alone cannot provide ecosystem balance necessary for continued survival of animal species in the forests.

Concern on the harmful environmental and social impacts of expansion has resulted in the demand for greater sustainability and accountability within the sector. The Roundtable on Sustainable Palm Oil emerged in 2004 through producer, buyer, government and civil society cooperation to help manage production challenges and also address the issue of sustainability particularly through stakeholder engagement and credible global standards. In this way, producers achieve certification by complying with a set of Principles and Criteria on transparency, legal compliance, and environmental, agricultural, labor and social best practices. Major importers around the world including the Netherlands, Belgium and companies like Carrefour and others have committed to buying all their palm oil from sustainable sources come 2015. The decision may well position RSPO certification as a criteria for international supply chain than as incentive for higher value market (Dillinger, 2011). Stakeholders in the oil palm industry recognize the ecological problems associated with its expansion. This has led to a solid commitment through agreements and laws already in existence on the protection and conservation of ecology, habitats and species. As early as in 1990s when the surge in the planted area began, Malaysian government started to put in place laws to preserve the environment - including the Protection of Wildlife Act 1972 (Basiron, 2007).

Malaysia as a signatory to the Roundtable on Sustainable Palm Oil (RSPO), has an obligation to adhere to the guidelines for environmentally sustainable palm oil production, including laws banning establishment of palm oil plantations in natural forests areas and peat lands (Butler, 2007b). The Malaysia oil palm industry is said to have made tremendous progress as it strives operate within the RSPO framework. It has no doubt recorded progress in terms of social development of the people and has done well in the conservation and management of the environment while at the same time achieving a considerable economic development. The purpose of this paper is to investigate the sustainability practices of the smallholding oil palm sector with emphasis on the FELDA scheme.

2. Research Methodology

The study adopted quantitative approach to investigate the sustainability of oil palm smallholders based on the economic, social and environmental perspectives (3Ps). The study was carried out FELDA scheme (Jerengan Dungan, Terengganu State). Since the aim of the study was to investigate the sustainability of the smallholders based on empirical evidence and primary information and not to build a new theory, the study adopted a quantitative approach. The main reason for the use of quantitative approach was to help establish association between the identifiable variables of the participating smallholders, and to determine whether the generalization that FELDA scheme has helped to improve the lives of the smallholders. Questionnaire based survey was used to extract information from the smallholders themselves which allowed for generalization. An open-ended questionnaire used with a five-Likert option. Number of respondents was 50. Technique for sampling was stratified random in which the participants were categorized according to number of years they have spent on the scheme. The premise for this choice was to enable for more representation to improve the accuracy and reflect needed variables. The questionnaire was divided in to two section; section one covered the demographic detail of respondents and section two dealt with the sustainability practices; the environmental, social and economic sustainability. A research assistant from UKM, with rich experience in data collection was hired and recruited to assist in the data collection for the study because of language barriers; because most of the respondents prefer to communicate in the local language, and also help to have access to the local community. The questionnaire used had two version; one was Bahasa Malay and the other in English. All the respondents lived in the same FELDA estates. Data collected from the questionnaire survey was processed using Statistical Package for the Social Sciences (SPSS), and analysed quantitatively using simple percentage.

3. Data Analysis

The statistical methods used in the study consisted of descriptive statistics of frequency counts, percentages. Responses to the questionnaire were pooled, edited ad scored. Questionnaire on sustainability has a Likert scale of 1to 5 score for strongly agree, Agree, Unsure, Strongly disagree, Disagree. To determine the value of items, the maximum of each of the nominal values was divided by N (50). For purpose of interpretation, scores are assigned according to percentage of response. The scores assigned range from 100% to 0%.

4. Results and Discussions

4.1 Demographic Profile of the FELDA smallholders' Scheme:

Table 1 shows the demographic distribution of the respondents. The age distribution ranges from 21 years to 90 years old. We surveyed a total of 50 respondents. Majority of them were in the age bracket of 51 years to 60 years. Age 41 to 50 represented 24% of the respondents, followed by 51-60), which represented 36%. Those in the age bracket of 21-40- and- 62-to-70 respectively, represented 18 % each of the number of respondents. Those aged 71-to-90- followed representing 16 %. In the sex distribution, 70% were male or 30% of were female. In the educational category: 19 (38%) of the respondents had certificate/diploma, 15(30%) did not disclose their education, 14(28%) had college degree, and 38% had primary/secondary certificates. In the marital status; 80% was married, 16% single and divorcee 4%. On households, 37(74%) had up to 5 –to-7 family members, 9(18%) had 8 and more household members, and 4(8%) had 2-4 household members.

Table 1: Demographic Profile of the FELDA smallholders' Scheme

Issues	1	2	3	4
Age	21-40 (18%)	41-50(24%)	51-60(36%)	61-≥ (22%)
Sex	Male (70%)	Female (30%)		
Marital status	Single (16%)	Married (80%)	Divorced (4%)	
Level of Education	Primary- Secondary (38%)	Diploma (4%)	Degree (28%)	Others (30%)
Service Length (years)	1-5 (20.9%)	6-10 (33.3%)	10≥ (45.88%)	
Income P/M	5000-7000 (22.2%)	7001-9000(18.1%)	9001-11000(20.8%)	Others (38.9%)
No. of Households	2-4(8%)	5-7(74%)	8-≥ (18%)	

Source: Primary survey 2014

4.2 Economic sustainability of FELDA Smallholders:

Majority of the respondents 60 % indicated 'strongly agree' when asked if their economic status has improved or not improved over the years as a 'FELDA' smallholders (Table 2). 30 % indicated 'Agree', followed by 10 %; 'Not sure', no respondent indicated 'disagree and strongly disagree.' On "increase in revenues and incomes", 50% indicated 'strongly agree', 42% 'agree' and 8% 'Not sure'. Majority of respondents; 40% and 38% (strongly Agree and Agree) indicated that FELDA scheme had given them and their community employment opportunities than any other economic activity they previously engaged. The result agrees with, Arif Simeh and Tenggku (2001), that Felda scheme created jobs for communities and had significantly reduced poverty among the settlers from 68.3 % in 1970- to -mere -11.8 % in 1997. When asked if their have improved any better, we found 'strongly agree' (50%) and 'agree' (40%), 6 % unsure, and 2 % each of Disagree and strongly disagree. The agronomical skills of the respondents have also improved, 68% 'strongly agree' and 20%, 'agree'. By this we found that the respondents have benefitted from the training courses conducted by the FELDA management. On their financial security, and stability, 60% indicated 'strongly agree' and 40 % showed Agree. By this we conclude that the settlers are financially stable now than they were in their previous jobs.

Table 2: Economic sustainability of FELDA Smallholders

Economic Issues	Strongly Agree	Agree	Neutral	Strongly Disagree
Economic sustainability improved due to FELDA.	30(60%)	15(30%)	5(10%)	- (0%)
Increased revenues and incomes as FELDA settler	24(50%)	21(42%)	5(8%)	-
Employment opportunities to the communities and settlers	20(40%)	19(38%)	9(18%)	2(4%)
Improved standard of living among scheme settlers	25(50%)	20(40%)	3(6%)	1(2%)
Improved agronomical skills	34(68%)	10(20%)	6(12%)	-
Better financial security now than before.	30(60%)	20(40%)	-	-

Source: field survey (2014)

4.3 Social sustainability of FELDA Smallholders Scheme:

Respondents were asked about their social status; majority of them indicated 'strongly agree' 22 or (44%) and 'Agree' 20(40%) respectively, indicated that their social status have improved over time since joining federal land development authority scheme (Table 3). On if the lives have been impacted for better through the CSR by the FELDA management, majority responded positively with 38 respondents 'Strongly agree' and 12(24%) 'Agree' representing 76 % and 24 % respectively. Being FELDA scheme settlers have also helped improved the quality of lives and health status of the settlers with 32(64%) strongly agree, 16(32%) Agree and 2(4%) unsure. Respondents said that their social wellbeing have continuously improved through the provision of recreational and infrastructural facilities by the management of FELDA. On the quality of education; 24(48%) strongly agree that their children were provided quality education, 15(30%) indicated agree, while 11(22%) was unsure if the education provided by FELDA was of quality. On participation in decision making that affects them; 22(44%) strongly agree that they participated, 19(38%) agree, 1(2%) unsure, 6(12%) strongly disagree, while 2(4%) disagree. The result contrasts with the common perception that smallholders were mistreated and did not participate in decisions that affect them. In this regard we could not conclude that all workers were treated fairly or not because the study was carried out in a single settlement run by FELDA. Therefore, the response may not be the true representation of all that take place in other settlements. Further study may shed more light in this regard.

Table 3: Social sustainability of FELDA Smallholders Scheme

Social Issues	Strongly Agree	Agree	Neutral	Strongly Disagree	Disagree
Social position improved from being a FELDA settler.	22(44%)	20(40%)	8(16%)	0%	1.70
CSR by FELDA management improve the social lives of settlers?	38(76%)	12(24%)	0%	0%	0%
Quality of life & health status of the settlers improved due to policy	32(64%)	16(32%)	2(4%)	0%	0%
Education incentives by the FELDA are of good quality?	24(48%)	15(30%)	11(22%)	0%	0%
Participate in decision in matters related to FELDA settlers?	22(44%)	19(38%)	1(2%)	6(12%)	2(4%)

Source: field survey (2014)

4.4 Environmental sustainability of FELDA Smallholders Scheme:

The impact of agricultural activity on the environment has been a topical issue around the world especially as it relates to oil palm cultivation. Because demand for palm oil increases, more lands are cleared for expansion or plantation, in most cases at the expense of the environment. Loss of natural forests, loss of biodiversity, ecosystem degradation, and anthropogenic climate change have all been attributed to large scale cultivation. Respondents were asked about their knowledge of environmental conservation and protection of animal species and if they considered it important. The response showed that 37(64%) strongly agree, 15(30%) agree, and 3(6%) unsure. The finding concurs with Basiron (2007), that policies are in place to ensure the preservation of the environment including the Protection of Wildlife Acts promulgated as early as in 1972, and a ban on the establishment of oil palm plantations on natural forests and peat-lands (Butler,2007b). On the use of modern technology in their operation, results showed that 28(56%) strongly agree that modern technology was important and it has helped in reducing environmental impact, 12(24%) agree, 8(16%) unsure and 2(4%) strongly disagree. Most of the respondents argued that through training and mechanization that they have achieved much in reducing environmental issues. They also said that extension officers do visit their plantations from time to time to give training, and that enforcement agents equally visit to ensure compliance on the best practices. Respondents were aware that their plantation activity contribute to the destruction of ecosystem and wildlife; the results showed that 30(60%) strongly agree, 13(26%) agree, 6(12%) unsure, while 1(2%) strongly disagree (Table 4). When asked their opinions, majority said they were concerned about ecosystem destruction but also constrained to do more to stop it because they needed to grow crops to be able to care for their families. On periodic review of the, 26(52%) indicated strongly agree, 20(40%) agree, 4(8%) unsure, while 0(0%) strongly disagree. By the result we conclude that FELDA scheme review their activities periodically in order to improve in their environmental sustainability. This is consistent with best agricultural practices. Life cycle assessment by Malaysian Palm Oil Board on oil palm supply chain, and the Conservation efforts (Malaysia palm oil board in was one of the efforts towards conservation and sustainability.

Table 4: Environmental sustainability of FELDA Smallholders Scheme

Environmental Issues	Strongly agree	Agree	Neutral	Strongly Disagree	Disagree
Conservation & protection of species in settlements	37(74%)	15(30%)	3(6%)	0	0
Modern technology to address environmental issues	28(56%)	12(24%)	8(16%)	2(4%)	0
Plantations destroy ecosystem and wildlife.	30(60%)	13(26%)	6(12%)	1(2%)	0
Periodic review of activity help reduce environmental issues	26(52%)	20(40%)	4(8%)	0	0

Source: field survey (2014)

5. Conclusion

Depending on one's position, some say oil palm industry is a curse, others say it is a success story and a miracle through wish poverty have been fought and won especially in the two largest growers and exporters of palm oil. Oil palm cultivation no doubts creates job and job opportunities to millions of people especially in the rural areas. Studies have shown that it has contributed hugely in the economic activity and development especially in Malaysia and Indonesia; the two largest producers and exporters. Oil palm smallholders' scheme under the Malaysian Federal Land Development Authority is a success story in creating jobs opportunities for the population, helping to resettle landless farmers and reducing poverty. As the fourth largest contributor to the economy, it employs millions of people as well as a major foreign exchange earner. Arif Simeh and Tengku (2001) on the impacts of smallholders' scheme on rural livelihood; found that poverty amongst the rural livelihoods was significantly reduced from 68.3 % in 1970 -to- mere 11.8 % in 1997. On the economic sustainability of the smallholders, the result shows a strong indication that the sector has positively impacted on the lives of the smallholders- from improved savings and revenue to financial security among the smallholders. Through FELDA schemes, the agronomical skills of the smallholders have significantly improved, their standard of living increased and they job security assured compared to their previous jobs. On the social sustainability, our samples strongly indicated positive results about social benefits of scheme to the smallholders under the Federal Land Development Authority. Settlers' social status significantly improved. Also on the corporate social responsibility of the scheme to the community in terms of infrastructure, we found that an overwhelming majority of respondents agreed that the scheme has contributed to a larger extent in improving their health and quality of life of their community. It should be noted that most of the respondents came from the community where the survey took place and they make a large proportion of the

scheme's settlers. Majority of indicated that their children were provided with quality education and that they participated in decision making that affects them as well as their constituency. We found that the benefits of the scheme depended on the level of involvement. We conclude generally that the impact of FELDA scheme is spread from financial security to jobs creation and infrastructure projects such as accessible road networks, medical facilities and education. Nonetheless, we also recorded negative impacts such as; loss of land rights and traditional way of life of the indigenous people, forest and biodiversity issues, pollution (water, air and land) as more lands and forests areas make way for plantations. We conclude that oil palm plantation if properly managed has the potential to address issues related high unemployment and poverty especially in the rural area as evident in the results.

6. Limitation to the Study

The study is limited to the socioeconomic and environmental impact of the FELDA smallholding scheme in the research location, and may not necessarily reflect the socioeconomic and environmental impacts of the scheme elsewhere or other estates including the independent and large estate plantation in the country. The study is also limited to information gathered from the smallholders as they provided, and augmented with past literature on relevant and related to oil palm and smallholders in general. Nonetheless, we believe that the study has given insight into the activities of the scheme in the studied area and can contribute to the existing body of knowledge in the field of study.

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