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Efficiency Analysis of Palm Plantation Plasma Farmers Certified Rspo and without Rspo on Sustainable Palm Plantation Management in Musi Banyuasin Regency South Sumatera Indonesia

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Abstract. This study aims to compare the income of smallholder oil palm plantations with RSPO certified and non RSPO certified in Banyuasin Regency, analyze the efficiency level of plantations with RSPO certified and without RSPO certified. The study conducted in Musi Banyuasin Regency of South Sumatra Province. The results showed that the revenue of smallholders in the plantation with RSPO certified more than smallholders non RSPO certified, the components that influence the difference income are the output of production, production costs and selling prices received by farmers. The efficiency level in terms of factors plantation land,capital and labor showed that the plantation with RSPO certified, the efficiency level is affected by issued of expanding land and capital, while for the non RSPO certified, the level efficiency tends to be influenced only by the expansion land.

Keywords: Efficiency, Management, Plasma Farmers, RSPO and Non RSPO certificates, Income

1. Introduction

Oil palm plantation is one of main stay commodities in Indonesia that have big contribution to foreign exchange as well as bringing positive economic impact on society, both the people directly involved with the activities of the plantation and surrounding communities. It is inevitable that the implementation of the RSPO (Roundtable on Sustainable Palm Oil) has now become the hottest issue in the palm oil industry. Regardless of the parties who are still pessimistic about the RSPO, the challenge to realize the palm oil industry environment friendly cannot be avoided. RSPO is one of the keys to answering these challenges. Message from stakeholders including industry participants with RSPO palm oil is actually quite encouraging as seen from the increasing number of members. On the mat WPOSE (World Palm Oil Summit and Exhibition) in 2008, one of the initiators RSPO Vengeta Rao mentioned that the members of this year already more than 250, bigger than 2002 that consists of only a few members only. Never the less, the hard work is still required to achieve the objective promoting RSPO certified palm oil (Certified Sustainable Palm Oil/CSPO), including costs related to the certification and industry readiness.

The difficulty of the requirements plus substantial costs required to obtain the certificate does not cause a lot of oil palm companies in Indonesia which has had such certified. Currently, in South Sumatra only has one company that manages palm oil plantations with RSPO certificates. Plantations of palm oil estates in question are managed by PT Hindoli a garden Palm Oil located in the Musi Banyuasin Regency management. PT Hindoli has produced palm oil by maintaining a sustainable environment with high social responsibility. This is because the determination that a company running a chain of oil palm plantation operations are sustainable or not is through the criteria, among others, how they deal with environmental aspects, issues of biodiversity and social aspects. RSPO certification is obtained after passing a rigorous examination and

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assessment, in which all operations, processes and practices in palm oil plantations have been monitored and evaluated thoroughly by an independent committee. In 2010, the RSPO certificate obtained not only by the nucleus, but also has been obtained by plasma from PT Hindoli. Management pattern of RSPO certified palm oil plantation which should show the ideal pattern of management by the company either on land or on land the core plasma as a partner in producing oil. That is, the problems tend to occur in palm plantation management has tended to be overcome. The results of the Socio-Economic Programs Team University of Sriwijaya Agriculture Faculty in cooperation with the Research Team of PPKS Medan (2010), suggests that the problems of Palm Plantation Management in South Sumatera generally are:

- The division of land and management of oil palm plantations to the plasma tend to be unfair, it is not transparent and not in accordance with the commitment and collective agreements and rules.
- Determination of the burden of credit generally without involving farmers in a participatory manner;
- Cheating in the process of weighing and charging management fees and transportation are still frequently occurs, there by reducing farmers' income.
- The process of determining the price of fresh fruit bunches (FFB) does not involve farmers systematically so that the price of FFB is not fully the result of deliberation;
- Local people do not get a chance to fill jobs that are available in the nucleus and the CPO processing plant;
- Road infrastructure connecting the shaft and into the garden of plasma did not get the attention of maintenance by the company and the government;
- Placement of the garden lies the plasma tends not submitted in accordance with the land;

There are still environmental pollution by factory waste and chemicals used in oil palm plantations on the river water, soil and air. is still low charge technology that can be applied and institutional system that has not been effective. As a result, the national oil palm plantation productivity is low and inefficient compared to the other oil producing countries. On the other hand, we managed to increase oil palm plantation area and production volume of TBS. It has not be able to overcome the problems that arise due to the abundance of FFB production from their fields (self) and the low price of FFB in the planters. Another problem is the conflict in the prices received by farmers never-ending, where farmers want higher prices TBS, while the core want to buy at low prices. Currently, the condition is exacerbated by problems of oil prices continued to fall today as the impact of global crisis, of course, impact to the oil as an export commodity. As a result, the party who first became a victim of the complex of the issues surrounding the price of oil is of course the farmers. Prices are low and likely not able to cover the expenses of production costs resulted in the current fat of smallholders became like a horn tip. So that, the purpose of this study are to: 1. comparing the incomes of smallholder oil palm plantations RSPO and non-RSPO certified palm oil Banyuasin Regency, 2. analyzing the efficiency of farm businesses that have been certified and not certified by the RSPO.

2. Research Method

The research was conducted in Musi Banyuasin Regency of South Sumatra Province through a descriptive study. Sampling method is using the Simplified Cluster Sampling (Simple Cluster Sampling). To that end, the population divided into groups of management patterns as groups or clusters according to the research focus.

Data collected includes primary data and secondary data. The data is then processed quantitatively using mathematical calculations and statistical methods are then followed by a descriptive analysis, namely by presenting results obtained in the form of a systematic description. Analysis of the relationship with the total area efficiency of farming acreage relationship between (farm size) with the efficiency of oil palm plantation business people (farm efficiency) assessed by analysis of farm production response function using a Cobb-Douglass function. Furthermore, the efficiency of visits based on the value of marginal productivity. Associated with business efficiency, partially to show an association with the land area business efficiency can be based on the value of marginal productivity (MP) of land as the value of elasticity in increased output. The larger the value of MP can be said that efficiency was also high.

3. Results

3.1. Plasma Farmers Income of RSPO and non RSPO Certificate in Banyuasin Regency

3.1.1. RSPO Certified Farmers' Income

Farmers with RSPO certificates (plasma PT Hindoli) have costs of doing business palm oil plantation consists of fixed costs and variable costs are presented detail in table 1. Fixed costs incurred farmers in this study include depreciation of equipment, compulsory savings, and the United Nations. Equipment depreciation costs include hoes, saws, hand sprayer, rickshaw, machetes, gancu, Chisel, egrek, and grass machinery. Based on Table 1 we can see the average cost depreciation value tool used for oil palm farming by smallholders is Rp.974.417. These costs are calculated based on the equipment used in conducting farmers' oil palm farms. The variable costs incurred by farmers in the study include the cost of purchasing fertilizer, pesticides, labor, and the pieces of the organization. Average variable cost is the cost of the largest pieces of plasma consisting of cost cuts and fee Gapoktan KUD which amount Rp7.196.824, 33. The cost cuts include KUD KUD fee, management fee, transportation costs, infrastructure, and cost analysis of the leaves. KUD Fee is the cost incurred for the administration KUD plasma of 0.50% of revenue plasma per month. Management fee is the cost incurred for operational management smallholder cooperatives. Transportation costs are the costs to farmers cooperatives to channel FFB (TBS) to PT Hindoli, while the infrastructure costs are costs incurred to farmers cooperatives to manufacture or repair the garden path. Cost analysis is the cost incurred leaf farmers to determine the need for fertilizer or fertilizer dose, where the leaf samples were sent to Balias Medan. Fee Gapoktan is the combined cost of farmer groups acquired 4% of farmers receiving plasma per month.

Table 1: Average Fixed Costs of Farmers Issued Plasma

No.	Cost Component	Total Cost (Rp/2 hectare/year)
	Fixed Cost	
1.	Defreciation tools	974,417.00
2.	Save compulsory	30,000.00
3.	Tax of land	33,000.00
	Total Fixed Cost	1,037,417.00
	Variable Costs	
1.	Fertilizer	6,926,269.70
2.	Herbicides	330,792.67
3.	Wage labour	4,613,120.94
4.	Fee Organization	7,196,824.33
	Total Cost	20,104,424.31

Average variable cost is the cost of herbicide smallest of Rp330.792, 67. This is because some of the oil palm smallholders at the time this study began to implement the RSPO (Roundtable on Sustainable Palm Oil) is programmed by PT Hindoli the form of a natural herbicide, for example with foster *Beneficial plant* vegetation around the plant oil palm, among others, interest at eight (*Turnerra cubulata*), similar *Neprolepis cycads*, and tears of bridal flowers that serve to stimulate the insects to come so that these insects can eat fire caterpillar pests, ants functioning for pest caterpillars eat the fire, and developing an owl populations as pest predators mice with the establishment of an owl houses in oil palm plantations. In addition to environmentally friendly, it also can reduce farmers' production costs due to reduced use of chemicals.

Labor work force used include fertilizing, weeding, pruning, spraying, and harvesting. Wages incurred farmers harvesting which amounted to Rp70 from the production of palm oil farmers. Labor wage average farmers in two villages namely equal Rp4.613.120, 94 Wage labor is paid at once because of a labor contract.

Oil palm plantations are cultivated by smallholders in this region the average age of 19 years, with an average FFB production of 54282.26 kg per year or 54.28 tons per year with the harvest period every 15 days once or twice a month . Performed cropping systems in rotation / not at the same time, yields paid to each of the administrators group to the KUD, then after weighed noted. Furthermore KUD will continue to PT Hindoli deposit to be processed into CPO. KUD has a vehicle transportingTBS alone in sending results, with direct transport payment system KUD deducted from the proceeds of sales FFB smallholders. Acceptance can generally be defined as the amount of real production per unit of production. Acceptance of

all activities is derived from farming during the period reckoned from the sale or re-assessment (Soekartawi, 2005). Revenues in this study means the total income earned in the smallholder oil palm farming for a period reckoned from the sale. Each month the price of oil palm FFB prices fluctuated following the established government, ranging Rp.1.200, - up to Rp.1.400, - /kilogram with an average FFB price of Rp.1.221, 82 /kilogram. From the average price received by farmers and production fluctuations are received per month, average receipts obtained plasma within one year for an area plots (2 ha) amounted Rp.67.251.105,53.

From the value of acceptance is obtained, as well as production costs incurred can be calculated from the income of farmers, which can be calculated through the reduction of revenue with production costs. The results of detailed calculations presented in Table 2.

Table 2: Average income of Oil Palm Farmers Farming Plasma on the Company RSPO certified

No	Description	Number (Rp/2 ha/year)
1.	Receipts	67,251,105.53
2.	Production Costs	20,104,424.31
3.	Revenue	47,146,681.23

Based on Table 2 can be seen that the average farmer acceptance of Rp.67.251.105, 53 per year with production costs of Rp.20.104.424, 31 per year, so that income earned in one year from the reduction of revenue with production costs that is for Rp.47.146.681, 23 per year per 2 hectare

3.1.2. Non RSPO Certified Farmers Income

From interviews in mind that the average yield obtained by farmers with non RSPO certified at the core or plasma from the garden is as much as 29,656 kg / kav / year, with TBS to a middleman selling price average of Rp. 933 per kg. Farmers' production costs incurred consist of two types namely fixed costs and variable costs. Variable costs incurred by the farmers include the cost of fertilizers, pesticides, transportation costs of fresh fruit bunches (FFB) and labor. While the fixed costs incurred by the farmers include the cost of equipment depreciation was presented in Table 3.

Table 3: Average Costs of Production of Farmers Produced Plasma PTPN VII

No	Cost Production	Number (Rp/kp/year)
1	Fixed Costs	112,228.00
2	Variable Costs	8,742,308.00
3	Total Production Costs	8,855,135.00

From Table 3 shows that the average total cost of which is used by farmers as an example in the production of palm oil takes place in the farming of Rp.8.854.536 per plot per year. Fixed costs include depreciation costs of equipment used in farming oil palm growers, such as hoes, sickles, sliding and spray equipment. While the variable costs are costs incurred for the purchase of farmers' fertilizer, herbicide and labor costs. Of the total production and selling prices received by farmers, it can be calculated number of receipts per farmer per year plots of Rp. 27,693,700. If the reduced production costs incurred, then for one year the farmers earn an income of Rp. 18,838,565.45 per plots.

3.2. The efficiency Level of RSPO Certified Plantations and Non RSPO Certified

In this study the relationship between the efficiency of oil palm farming, associated with an area of land owned by farmers is reviewed based on the response function of the production of palm oil business. Given the extent of land owned by farmers varies, then the business of land area is divided into two groups, ie groups with a land area - 2.5 ha and groups with land area> 2.5 ha. In this case, the land area 1-2.5 ha of farmers are still able to manage itself as a family business (family farming) because the majority still use labor in the family. The results of the response function of the parameter estimates of production of both palm farming pattern is presented in Table 4.

Table 4: The results of the response function of the parameter estimates of production in the plantation farming palm oil

No	Category Area(hectare)	Coefisien Regression						Regression Elasticity		R^2	
		Land		Capital		Labour					
		Layer 1	Layer II	Layer I	Layer II	Layer I	Layer II	Layer I	Layer II	Layer I	Layer II
1	1 – 2.5	0.89	0.85	0.78	0.0005	0.047	0.036	0.92	0.90	0.94	0.88
2	> 2.5	0.83	0.80	0.80	0.1	0.0006	0.0005	0.93	0.91	0.97	0.92

In general these two models, both in layer I and in layer 2 can be accepted because both have the value of R2 (confidence ratio) above 85%. Under the category of land area (farm size) is known that the increment of output proportionately smaller than the increase in aggregate inputs (returns to scale), namely the I-value layer of 0.92 at 1-2.5 ha of land and the land area and 0.93 more than 2.5 ha. This suggests that farming on both land area is located on the accretion region of diminishing returns (Decreasing returns to scale), ie when taken together in one unit of input plus a proportionate, the output obtained will be smaller and one, and means also that the farming is done on a rational production region. Judging from the degree of influence of the three factors of production (Land, capital and labor) to the total production, it appears that the lining of the land factor I (Xl) and capital (X2) showed a significant effect, which means to have real impact on farm production (y). This fact is indicated by the value of p-Level which is still much smaller than 0.1. Other production factors, labor (X3) is insignificant. This condition indicates that the oil palm plantation development in layer 1 is in addition to still oriented or focused on the expansion of land, also influenced by factors of capital. While in layer II only significant factor influencing land. This means that oil palm development in layer 2 is still oriented or focused only on the expansion of land. This condition generally occurs in the real estate sector (agriculture) in our country, the increased production depends only on the expansion of land, less oriented through the development of the role of labor and capital that leads to the intensification of activities. In a very broad area that land can still be done, but on limited land area would be very detrimental. Extension activities should be balanced with the intensification and better farming management (there are cost efficiencies and increased productivity). Associated with farming efficiency, partial in hectare to indicate a relationship with business efficiency can be based on the value of marginal productivity (MP) of land as an elasticity value in increasing output. The larger the value of MP can be said that efficiency was also high. The value of marginal productivity of land in both groups hectare of oil palm businesses respectively was 2.24 (1-2.5 ha) and 20:11 (> 2.5 ha). Improved results will lower the land area above> 2.5ha. MP value indicated by the largest land area 1-2.5 ha of oil palm indicate people's business development should be at 1-2.5 ha of land area as a family business (family farming) because it would be more efficient.

4. Conclusion

- Income of smallholders in the plantation with RSPO certified is greater than smallholders without RSPO certified, with the components that influence different income are output of production, production costs and selling prices received by farmers.
- The efficiency level of farming in terms of factors plantation land, capital and labor showed that plantation with the RSPO certified, the level of efficiency affected by expanding land and capital issued, while the without RSPO certified, the efficiency level tends to be influenced only by the expanding land.

5. References

[1] Agung, I.G. N., N. H. A. Pasay and Sugiharso. Microeconomics Theory. PT Raja Graffindo Persada. Jakarta. 2008.

[2] Agency for Agricultural Research and Development. Prospects and Development Direction Sustainability of Palm Oil. Department of Agriculture. Jakarta. 2005.

[3] Boediono. 1997. Micro Economics, Introduction to Economic Science Series Synopsis No. 1. BDFE UGM. Yogyakarta.

[4] Daniel, M. Introduction to Agricultural Economics. Earth Literacy. Jakarta. 2002.

[5] Plantation Office. South Sumatra in Figures. Disbun. Palembang. 2009.

[6] Dradjat, B. Considering Relevance RSPO certification. Agricultural Research and Development News Vol.31 No. 6. Research Institute for Estate Crops of Indonesia, Bogor. 2009.

[7] Mahartania, S and R. Wibowo. Coconut Oil Commodities Contribution to the Economic Region of West Kalimantan Province. Journal of Agribusiness, Vol IV Number. 2 and Vol V Number 1, July 2000-June 2001. P. 48-55.

[8] Sukirno, S. Introduction to Micro Economic Theory, Third Edition. PT Graffindo Persada. Jakarta. 2002.

[9] Tohir, K. A strand of Knowledge About Farming. Indonseia Part I. Literacy Development. Jakarta. 1993.

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