



Synergy subject of development oil palm in Riau province

Pazli SIP MSi

Agricultural Development and Rural Regional Planning at the University of Riau, Indonesia
pazliku@gmail.com

Available online at: www.isca.in, www.isca.me

Received 6th April 2017, revised 26th April 2017, accepted 5th May 2017

Abstract

Development of plantations in Riau Province carried out with the cooperation between the estate subject is government, private to People. Aspects of the estate such as land, land management techniques, the physical condition of the land and land management of subjects each subject always constrained berlangsungnya plantation production sustainability plantation until the expiration of the time span of future cooperation, or looks still disintegration in perjalanannya. It is therefore important to look at the relationship significant between the area of land managed, management, land management, physical condition managed lands and conversion of land with production / net income of farmers on the pattern of plantation played by each subject of the estate, it is also important to design such as whether the relationship between plantation integrative subject. Research done in Riau Province, Indonesia. This study is a combination of surveys and case studies as well as primary and secondary data analysis. Using Chi square test (chi square test) to see the relationship between variables, and to see the most influential variables used multiple logistic regression (Binary Logistic) with SPSS 17.0 for Windows. The results of this study found that the area of land ownership relationship (X1) with the income of farmers from several estates patterns found in value of 0.003, meaning that a significant relationship; land management relationship with the revenue that farmers receive each month, the value of 0.001 means significant relationship. ; Physical condition of land relations with the net proceeds received by farmers every month worth 0,064, meaning that no significant relationship. Land conversion time relationship with income received by farmers each month, the value is 0.072, meaning that the relationship is not significant. The most dominant factor influencing farmers' production management factor is the management of land with a value of exp (β) 13 181. Aspects in the development of existing ones do not provide welfare to farmers participating because the relationship between the government, private and people are not synergistic and integrated in the management system of plantation development. Required an integrated development model between the subject plantation estates namely by providing adequate land area, the correct management of land management, the physical condition of land to be tilled people as farmers and plantation land conversion process between foster father that state enterprises and private companies.

Keywords: Biofertilizer, Blue green algae, Crop production, Nitrogen Fixation, Soil.

Introduction

In a real system of developing plantations in Indonesia polarized into two poles, the great and Smallholder Plantations. Differences were found in the combination of factors of production such as land, engineering, production, labor and management¹. Small holder tree is characterized by various weaknesses; agrarian concessions on less land, traditional technology, low productivity and the quality is low, production is irregular. Large plantations are characterized by a variety of strengths and advantages, namely: the agrarian business has vast land, using modern technology, high productivity, high product quality, high yield continuity and efficiency in production costs².

The first camps to assess the macro, big plantation system has been of benefit to the state for production and value-added dihasilkannya³, a large estate system to contribute to the national economic growth⁴. The second camp; large plantations it is anti-development and cause chronic poverty in Rural¹. The system shows the large estates over anti-development

properties, have no connection (linkages) which means the economy around⁵. Even take over the lands previously controlled by the people⁶. According to Goldsmith, Gunawan⁷ efforts to improve the relationship between the company and the people is pursued through interaction between Satellite Farming which is a small farmer with Corporate Core which is an agroindustrial company among others; The first plantation development efforts involving local communities with this approach: i. Increased production together; ii. Increased farm facility; iii. Sarana and infrastructure to support agricultural production⁸; Both perform three patterns of development, namely: i. Perkebunan Inti Rakyat (PIR), a business partnership as the core of large plantation companies and farmers as plasma. ii. Pattern Development Services Unit (UPP) in which the technology in the development process. iii. Governmental pattern, built community gardens and obtain guidance and counseling from the government.

Philosophically in various patterns estate development, Government, Corporate and People are the subject of the most

essential agrarian. The government has binding authority and force a policy, as well as private parties who have the ability manageman and finance and technology, as well as many of the people who mastered agrarian communal and dealing directly with the earth and water.

The argument above is strengthened by the reality that the development of existing plantations in Indonesia are generally located in rural areas or on soils either originally or are controlled by people who are not strong evidence indeed authentic. But has long been controlled and cultivated people. While the government insists there is a right of the people to the land of the vast rural land and rural land largely affirmed the government to give concession tenure and private companies that invest in the plantation sector. These conditions always lead to agrarian conflicts. In Indonesian plantation development is always colored by the conflict, ranging from land ownership conflicts to plantations by the private sector, about the price of plantation crops, crop distribution, repayment of long-term community forest.

This study analyzed how significant relationship between the area of land under management, land management models, the physical condition of the soil which is maintained and conversion of land with a production rate or the net income of farmers in plantation patterns that exist both in partnership and processed by farmers independently.

Based on the review of the literature on agricultural development from the perspective of agrarian in Indonesia, where the subject of agrarian actors plantation development (Government, Large Enterprise Private as the core) has always been on the interaction of economic, social and land tenure structurally higher, while the "people" is a society rural farmers are at the bottom structure in the system of plantation development. They have minimal access to resources and therefore agrarian plantation Agricultural always tinged conflict among subjects. The relationship between the subject as well Stake Holders agrarian plantation development, namely the Government, Private Companies and People is A-Simestris.

Methodology

This study is a combination of surveys and case studies and secondary data analysis that takes a sample of the population and than use the questionnaire to data collection that describes the independent variables are: X1 (land area), X2 (patterns of land management), X3 (Physical Condition of Land), X4 (land conversion) and a variable dependent Y (the result of farmers' net production). This research was conducted in Riau with case studies based plantation agrarian conflict between the government, private company and the People pembangunanya through Government Partnership, Company and People's plantation in Kuantan district Singingi.

The object of research is a Region Smallholder partnership pattern KKPA PIR and partnership schemes and patterns on Regional Plantation Governmental and Private Large Company. Region in question is the use of the earth's surface or agrarian resources (land, water and air) as base Oil Palm Plantation development related to social life. In agrarian objects there are patterns of development partnership that PIR, KKPA and Governmental Pattern. Sampling was done by using Multi-Stage- random sampling in the study population, which is reflected in the Table-1.

The data were taken using a questionnaire which is then processed using SPSS 17.0, the Chi square test to determine the significance of the relationship of independent variables and the dependent variable with a confidence level of 95%. Next will be a multiple logistic regression test to see where the independent variables that most influence on the dependent variable (production of farmers).

Results and discussion

Results: Picture of the distribution of respondents based on the variables: (extensive land ownership; methods Stewardship), Physical condition Land) research can be tested as land conversion); Farmers Net income per month) as in Table-2.

Table-1: General overview and sample populations were chosen randomly.

No	PIR	KUD		Farmers Group		Farmers Respondents	
		Populations	Sample	Population	Sample	Population	Sample
1	PIR-Plasma	7	3	20	2	25	10
2	PIR-KKPA	2	1	20	2	50	20
3	Governmental	1	1	10	1	25	10
	Total	10	5	50	5	50	40

Based on the Table-2 it can be seen that the majority (68%) of respondents have a less extensive land category and 32% of respondents who own land with broad categories. The above data also showed that the majority (62%) of respondents manage the land with modern techniques and 38% of respondents who manage the land in the traditional way. In the table above there are also data on the majority (52%) of respondents manage land hard soil and 48% of respondents who own or manage land marshland. Then the data in the table show that the majority (78%) of respondents does not need to manage land conservation and 22% of respondents who manage to slow to conserve land. The Table also shows that the majority (64%) of low-income respondents and 36% of high-income respondents. The results of the bivariate test between independent variables and the dependent variable of research using chi-square test is described as follows:

Relations extensive land holdings (X1) with the net proceeds received by farmers every month.

Comprehensive analysis of the relationship between land ownership (X1) with the net proceeds received by farmers every month using chi square test by building Hypothesis:

H0: There is no relationship between the area of land ownership with the net result that in oil palm farmers receive each month.

Ha: There is a relationship between the area of land ownership with the net result that in palm farmers receives each month.

The results of comprehensive analysis of the relationship between land ownership relationships with the net proceeds received smallholders each month can be seen in the following Table-3.

Table-2: Frequency Distribution of respondents by independent and dependent variables.

No	Variable	Categories	Frequency (50)	Percent (%)
1	X1 (Extensive land holdings)	less extensive	34	68
		extensive	16	32
2	X2 (method Stewardship)	Traditional	19	38
		Modern	31	62
3	X3 (Physical condition Land)	Wetlands	24	48
		Hard Land	26	52
4	X4 (land conversion)	Slow	11	22
		do not need Conversion	39	78
5	Y (Peasants Net Income per month)	Low	32	64
		High	18	36

Table-3: Area of land owned

Variable	Farmers Net Income				Total		P value
	Low		High				
	N	%	N	%	N	%	
Extensive Land							0,003
Less extensive	27	79	7	21	34	100	
Extensive	5	31	11	69	16	100	
Size Total	32	64	18	36	50	100	

* The average net monthly farmers the price of TBS in Rupiah (000) / kg.

The Table-3 shows that the majority (79%) of farmers who have land less widespread low income. The Table-3 also shows that the majority (69%) of farmers land has a high-income area. Resulting cross table above is 2X2, the expected value of no less than 5, then the chi-square statistical test used is the value Continuity Correction and the result p value of 0.003. P value 0.003 <0.05, therefore, concluded H0 rejected and Ha accepted, meaning that there is a significant relationship between the area of land ownership with the net proceeds received smallholders every month.

Relationship land management methods with the net proceeds received by farmers every month.

Analysis of the relationship between methods of land management (X2) with the net proceeds received by farmers every month using chi square test by building hypotheses:

H0: There is no relationship between the methods of land management with the net result that the oil palm farmers receive each month.

Ha: There is a relationship between the method of land management with the net result that in palm farmers receives each month.

The results of the analysis of the relationship between methods of land management with the net proceeds received smallholders each month can be seen in the Table-4.

The Table-4 shows that the majority (95%) of farmers whose traditional crops on low incomes. The Table-4 also shows that the majority (55%) of high-income modern farming. Resulting cross Table above is 2X2, small and the expected value of 5, by the chi-square statistical test (P value 0,001) in table where 0,001 p value <0.05, thus H0 is rejected , meaning that there is a significant correlation between the methods of land management with the net proceeds received smallholders every month.

Relation physical condition of the land with the net proceeds received by farmers every month.

Analysis of the relationship between the physical conditions of the land (X3) with the net proceeds received by farmers every month using chi square test by building hypotheses:

H0: There is no relationship between the physical conditions of the land with the net result that the oil palm farmers receive each month.

Ha: There is a relationship between the physical condition of the land with the net result that in palm farmers receives each month.

The results of the analysis of the physical condition of land relations with the net proceeds received smallholders each month can be seen in the Table-5.

Table-4: Land Processing Method

Variabel	Farmers Net Income				Total		P value
	Low		High		N	%	
	N	%	N	%			
Traditional	18	95	1	5	19	100	0,001
Modern	14	45	17	55	31	100	
Total	32	64	18	36	50	100	

*The average net monthly farmers withTBS prices in Rupiah (000) / kg.

Table-5: Soil Physical Condition

Variable	Farmers Net Income				Total		P value
	Low		High		N	%	
	N	%	N	%			
TWetlans	19	79	5	21	24	100	0,064
Hard land	13	50	13	50	26	100	
Total	32	64	18	36	50	100	

* The average net monthly farmers at a price of TBS in Rupiah (000)/ kg.

The Table-5 shows that the majority (79%) of farmers who farmed the low-income marshland. The Table-5 also shows that the numbers of farmers who farm on hard ground earners high and low are equal. Resulting cross table above is 2X2, with no expectation that the value is smaller than 5, then the chi-square statistical test used is the value Continuity Correction (P value 0.064) in Table, where P value 0.064 > 0.05, thus concluded H0, meaning there is no significant relationship between the physical condition of the land with the net proceeds received smallholders every month.

Relations the slow conversion of land with the net proceeds received by farmers every month. Analysis of the relationship between the slow paces of land conversion (X4) with the net proceeds received by farmers every month using chi square test by building hypotheses:

H0: There is no relationship between the slow conversions of land with a net result the oil palm farmers receive each month.

Ha: There is a relationship between the slow conversion of land with a net result in palm farmers receive each month.

The results of the analysis of the relationship than the conversion of land with the net proceeds received smallholders each month can be seen in the Table-6.

The Table-6 shows that the majority (90%) of farmers whose land conversion is slow on low incomes. The Table-6 also shows that the majority (56%) of farmers whose lands do not

need conversion of low income. Resulting cross Table above is 2X2, with no expectation that the value is smaller than 5, then the chi-square statistical test used (P value 0.072) in table, where P value 0.072 > 0.05, so H0 is accepted it means there is no significant correlation between the length of the conversion of land with the net proceeds received smallholders every month.

Multivariate analysis was then performed using multiple logistic regression test to see where the independent variables are the most significant effect on the production /farmers' net income per month. Multivariate analyzes were performed using multiple logistic regression that begins with a bivariate selection dependent and independent variables to be included in the multivariate modeling.

Based on the multiple logistic regression analysis, it was found that tilapia 3 variables p value <0.05, which means it can proceed to multivariate modeling to be tested simultaneously. 3 variables are X1 (land area) with p value of 0.002, X2 Land Management Method with p value of 0.005 and X3 (the physical condition of the land) with p value 0.036. Instead there is one variable that is not included into the multivariate model because its p value > 0.05, ie variables than conversion of land with its p value 0.062.

Furthermore, the multiple logistic regressions on three variables selected to see which variable has the most significant relationship to the production of oil palm farmers each month which can be seen in the Table-8.

Table-6: Slow Land Conversion

Variabel	Farmers Net Income				Total		P value
	Low		High				
	N	%	N	%	N	%	
Land Conversion							
Slow	10	90	1	10	11	100	0,072
Unnecessary conversion	22	56	17	44	39	100	
Total	32	64	18	36	50	100	

* The average net monthly farmers the price of TBS in Rupiah (000)/ kg.

Table-7: Results of the selection Bivariat through multiple logistic regression as a base consideration of subsequent models.

No	Variabel	Wald	Df	P-value	Exp(B)	Ket
1	X1 (Land Area)	9.713	1	.002	8.486	+
2	X2(method of management of land)	8.023	1	.005	21.857	+
3	X3 (Physical Condition land)	4.385	1	.036	3.800	+
4	X4 (The slow pace of land conversion)	3.472	1	.062	7.727	-

Table-8: Results of the selection Bivariat through multiple logistic regressions as a base consideration of further models.

Variable	Wald	Df	P-value	Exp(B)
X1 (land area)	3.997	1	.046	4.939
X2 (method of land management)	5.259	1	.022	13.181
X3 (Physical Condition land)	2.392	1	.122	3.286

Based on the above Table can be concluded as follows: i. There are two variables that have a significant relationship with a farmer who was shown with p value, two variables are <0.05 ie X1 (land area) with p value 0.046 and X2 (land management method) with p value 0.022. ii. Variables associated (interact) with the most significant net production output of farmers indicated by Exp (B) at most. In this case X2 Exp B amounting to 13.181. The greater the value of exp (B), the greater was the influence of these variables on the dependent variable.

Discussion: Gardening with patterns previously lacking cooperation involving communities in the planning and exacerbated by the conditions of the least educated people that do not understand about the agreement made with the company and the future of society expressed disappointment with the agreement made with the company. Regarding the results received by farmers, the research findings show that 64% of farmers with different patterns of low-income estates per month. Farmers' income with the pattern of cooperation with companies and the government found an average lower than the income of farmers who manage their land independently.

This is what triggered the conflict between businesses, governments and society, farming communities disillusioned with unsatisfactory results after the land is handed over to the company to do processing of plantation land with a pattern of cooperation. This is in line with the opinions Saith⁵ that large plantations do not provide welfare, to the workers and their families. Unable to drive local economic development. The system shows the large estates over anti-development properties, have no connection (linkages) which means the surrounding economy.

The disappointment of farmers is increasing because the land has been handed over to the company, so they lack the land to create a garden to improve its economy. This incident suggests that companies taking over or controlling land owned by farmers. This is in line with the opinions Fauzi⁶ that the company even took over the lands previously controlled by the people.

The relationship between oil palm land area managed by farmers and farmers' monthly income showed a significant association with p value of 0.003. Data show that the farmer has a large area to get a higher income than the farmers have less

land area. This means various estates patterns show kesuaian relinquished results to be processed and managed in cooperation independently. Farmers who own land area Yag with patterns of cooperation with the company will get a higher yield than the farmers who have less land area with the same pattern of cooperation at the same company anyway. Farmers who manage to land independently with vast land will get a higher yield than the farmers who manage their land less extensive land with the pattern of self-reliance.

Furthermore, the relationship between the method of land management and farmer-managed oil palm growers monthly income showed a significant association with p value of 0.001. Data show that farmers / companies that manage land in a modern way by using the method of fertilization, land clearing which is really going to get a higher income than the farmers/companies who perform traditional land management. This means various estates patterns show conformity results with modern methods of land management or traditional either by farmers independently or with a pattern of cooperation with the company. In addition farmers who independently manage the land in a modern with fertilization techniques and proper clearing the results obtained will also be higher than the income of farmers with a pattern of cooperation with the company.

Then the relationship between the physical condition of land managed by farmers and farmers' monthly income showed no significant association with p value 0.064. This indicates that the physical condition of the land in the form of hard soil marshland or no effect on the income of farmers. Reality on the ground showed that both marshland and hard soil can be cultivated palm after getting a touch of technology, such as the manufacture of channels and a variety of other methods. As a result of land that was once swamp land less arable become eligible for planting palm oil after getting a touch technology on non-farm pattern and a pattern of cooperation. The relationship between conservation land managed by farmers and farmers' monthly income showed no significant association with p value 0.072. This suggests that the slow pace of land conservation or conservation land that does not require no effect on the income of farmers. Reality on the ground showed that both the slow land conservation and land that do not require conservation provide relatively equal income with various patterns both plantations cooperation with companies or independently.

Last data show that the most significant variables that impact on farmers' income is the variable method of land management with a value of exp (β) of 13 181. This shows that the modern methods of land management which would greatly affect farmers' income to be received each month. With modern management techniques with a vast land will be more profitable than the traditional way of land management on land area equal.

Caused not favor a pattern of cooperation between government, private and community we need a new model of development of oil palm plantations that benefit all parties. Plantation

development model that integrates the Government Agricultural policy, its implementation to the Private Large Companies and Smallholder Plantations is to integrate public-private and the people in the management of plantation development since Planning aspect to the supervision aspect plantation development as seen in the chart below:

Conclusion

The conclusion of this study are of various patterns of development concerning aspects of agrarian estates, among others a significant relationship between the area of land ownership by farmers' income; No significant relationship with the land management methods farmers receive income every month. There are two independent variables that do not have a significant relationship with the income of farmers, the physical condition variable land and land conversion time. The welfare of plantation workers is determined by aspects of aspects of agrarian and non-agrarian aspect. Agricultural policies such as land reform towards plantation development must be supported by other government policies that favor the goal of plantation development. The necessary relationship between the government, private sector and the people are integrated in the management system of plantation development in the future are dating is to integrate public-private segigita and the people in the management of plantation development in Planning aspect to the aspect of Control.

Acknowledgments

Thanks infinite to all those who have assisted in the field, especially in data collection, among others, the Department of Plantation Province and All parties who contributed to this research.

References

1. Beckford George L. (1972). *Persistent Poverty under development in plantation economies of the thir world*. New York. Oxford university press.
2. Mubyarto (1983). *Politics of Agriculture and Rural Development*. (Jakarta: Sinar Harapan, 1983), p 107. Regarding worn words: "A kind of land reform", also Nasikun," green revolution and the problem of unemployment in developing countries, "in Prisms, October 10th, 1980, year IX, p 70,80.
3. Graham E. and Floering I. (1984). *The modern plantation in the third world*. LondonCroom Helm.
4. White Benjamin (1990). *Agro-Industry, Rural Industrialization and Transformation Pedesaan*. Dalam Sajogyo and Mangara Tambunan. *Rural Industrialization*. PT Sekindo Eka Jaya. Jakarta.
5. Saith A. (1989). *Location, linkage and leakage: Malaysian Rural Industrialization in national perspective*. The Hague, ISS working paper no. 56.
6. Fauzi Noer (1999). *Farmers and Ruler, Insist Press-Consortium for Agrarian Development-Reader Student*, Yogyakarta.
7. Gunawan Rimbo, Juni Thamrin and Mies Grijns (1995). *Small holder dilemma. PIR-BUN experience West Java*. AKATIGA.
8. Tjondronegoro S.M.P. (1999). *Agricultural Sociology: A collection of selected writings Bandung: AKATIGA*.