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**THE STUDY OF FARMERS' ECONOMIC ABILITIES IN PALM PLANTATION
IN RURAL REGENCY OF MUARO JAMBI**

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¹**ABSTRACT**

This research aims to Analyze household income capability to finance household needs and how to improve household income capability. The research was conducted in Muaro Jambi Regency in plasma farmers and self-help farmers. The research was conducted by survey where the sample was taken based on the representative representation of the phenomenon of the population. Sampling used is a multi stage sampling of sub-districts and villages. The sample size are 60 farmers consist of 30 Plasma Farmers and 30 Swadaya Farmers. The result of the research shows that 1) There is a significant difference between the average household income of Plasma Farmers with the average income of households of Swadaya Farmers, 2) There is a significant difference between the average cost of household needs of Plasma Farmers with the average home needs Ladder of Swadaya Farmers. 3) There is a significant difference between the level of household income capability of Plasma Farmers and Self-Helpers. Household income level of Plasma Farmers who are able to finance their household needs is about 95% relatively higher than Swadaya farmers about 87%, 4) The level of household income capability of Plasma Farmers and Self-Helpers who can not afford to finance their household needs can be improved through the application of crop pattern In-between palm-rice/corn-pineapple/banana-chili, and through the use of leisure time used for productive work each become 139.6 percent and 144.3 percent thus all farmers will be able to finance their household needs.

KEY WORDS

Income, economic ability, income, stage options.

Now Palm has become Indonesia's main export commodity and has been a major source of livelihood for millions of families. People's palm covers 83 percent of the total area of oil palm plantations in Indonesia with production volume reaching 68 percent of total palm production in Indonesia (DITJENBUN, 2016). Now Jambi Province is the third largest producer of palm oil after South Sumatra and North Sumatra. In terms of production of Cruide Palm Oil [CPO], 87 percent⁴ sourced from people's palm with an average plantation area of 3.85 hectares per farmer. Oil palm plantations in this area are growing so that the remaining natural forests are getting smaller, people's palm oil estimated has reached about 11.5 percent from Jambi Province (Anonymous, 2009).

Oil palm plantations in Jambi Province have a very strategic role as the province is the main producer of natural palm oil in Indonesia with a total area of about 490,346 hectares in 2003 and total production of 423,752 tons or 21.78 percent of Indonesia's palm oil production, and in 2016 Increased to approximately 526,174 hectares and total production of 453,365 tons or 23.71% of Indonesia's palm production. Contribution of palm to Product of Gross Regional Domestic (PDRB) Jambi equal to Rp 1,347 million or 36,56 percent from total export of GRDP without oil and gas Jambi Region. The export volume of Jambi's palm oil is 427,37 thousand tons which gives the country's foreign exchange input amounting to US \$ 18.2 million or 18.72 percent of the export of Jambi's plantation commodities. Besides oil palm plantations as a source of income and livelihood of about 260 thousand households and 20 thousand employees of plantation companies and processing industries of TBS is about 1.15 million people or 37.6 percent of the total population of Jambi Province (Central Bureau of Statistics Jambi Province, 2017).

The development of smallholder palm oil plantations in Jambi Province from various government projects namely the Nucleus Company (PIR) project, the Project Implementation Unit (UPP) and the partial relief project for 25 years (1977/1978 to 2016) was recorded to reach 224,712 ha or about 8,988 Ha per year. Since 1991 the government no longer develops plantations through PIR and UPP because there are other problems that some farmers cannot afford to pay off their credit and the quality of the oil palm is low but the palm oil development is still done by the government through the aid (Directorate General of Plantation Development, 2017).

In 2003-2017 the provincial and district governments in Jambi Province rejuvenated 1,248 hectares of community palm plantations through a state aid project, but in fact in 2017 the average palm oil productivity of 11.68 tons per year is relatively more Low compared to the productivity of oil palm plantations of the State of approximately 15.16 tons of TBS per hectare per year (Jambi Provincial Plantation Office, 2017).

One of the goals of rejuvenation of oil palm plantation is replacing old / damaged plants with superior clones of young who have high productivity. Rejuvenation of oil palm by farmers takes about six years to start producing. Therefore, farmers do not earn income from palm oil farming while the household needs continue so that there is a possibility of household income of farmers unable to finance their household needs. With this condition raises the question of how much is the level of income ability of households to finance their household needs before and during the reforestation of oil palm plantations and what are the options to increase farmers' household income?

From the fact that the condition of the palm oil plantation of low productivity of palm oil, the extent of the old / damaged plantation area and the hope of accelerating the rejuvenation of the people's palm oil plantation, it can be concluded that the main problem is "how to increase farmers' household income ability to finance their household needs with some basic questions as follows:

1. Is there a significant difference between household income, household expenses and household income capability to finance household needs Smallholders with self-help Farmers?
2. What is the option to increase the level of income ability of households of oil palm farmers?

In general, research aims to:

1. Analyze the difference between household income, household expenses and household income capability to finance household needs Smallholders with self-help farmers;
2. Analyze the option to increase the income level of household income of Palm farmers.

FRAMEWORK OF STUDY

Theoretical basis. Increase in farmers' income in the short term can be done through the use of gawangan between the palm by planting intercroops. Upgrading of oil palm growers can be achieved through palm oil reforestation along with land use among palm crops through integrated farming patterns (Tjasadihardja et al., 1995). The basic concept of the household economy is that the decisions for the production and consumption of farm households are related to each other (Becker, 1965, Chaykov, 1966 and Ellis, 1998). This study looks at the economic behavior of farm households to finance their household needs independently.

Efforts to improve household income levels can be done by increasing household income of farmers or reducing the cost of farmers' household needs. Increase in household income of farmers can be done on the pattern of oil palm crops through increased production of palm oil and increased productivity while the expansion of palm oil is relatively difficult to implement due to limited land owned by farmers. Increased income of other farming can be done on the land of yard business. Increased income outside the farm through the use of leisure time to work on other farmers' farming land, trading, or as employers or civil servants.

Household economic theory with respect to time allocation, leisure time usage, production and consumption are household decisions, while the allocation of spare time into working time in business activities will increase income. Activities in households for final (final) final goods that do not provide income and are known as Z - good. In addition, households have the opportunity to sell time to the labor market. Therefore, households should be able to allocate time optimally for production, work and leisure activities with time constraints, income, and certain production functions (Becker, 1965).

The concept of time allocation is also put forward by Becker (1965) which states that in a household the allocation of time is divided into three: (1) time to produce Z goods, (2) time to work as wage or wage; Leisure time in the family. Maximum utility in a household is limited by three constraints: (1) production function, (2) minimum required level of income, and (3) maximum amount of available working time.

Spare time (WI) is part of the available time that is not used for productive activities in farming or outside farming. Spare time is used to seek additional income for a household or to sell it in the labor market, or to consume the free time to relax (Bakri, 2003 in Zahri, 2003). The view on leisure leisure is found to vary, between work at home or other activities often difficult to distinguish by leisure, and this is one of criticisms of Becker's time allocation theory (Granon, 1997 in Hardi, 1990).

METHODS OF RESEARCH

Approach Method. The foundation of the research philosophy of 'Farmers Income Ability Analysis in Meeting the Cost of Household Rural Needs in Muaro Jambi District is a philosophy of positivism. According to Ethridge (1995), the philosophy of positivism (logical positivism) developed from physical science, and in economics involves the study of community values that stress the positive knowledge with measurement and quantification of data, and tends to make facts and theories as the source of the hypothesis. The approach method used in this research is developed by deductive and inductive approach method. The sequence of approaches is identifying problems, analyzing data and information, and explaining data and drawing conclusions.

Sampling Techniques and Data Collection. The research was conducted by survey where the sample was taken based on the consideration of the representation of the characteristics of population phenomenon. In analyzing field research data supported by quantitative and qualitative data, to control information that is qualitative required quantitative data information while to clarify quantitative data required qualitative data. Sampling used is a multi stage sampling of sub-districts and villages.

From each village a random sample of 60 samples of farmers from selected sample villages was collected. The samples of plasma farmers and self-help farmers were determined based on the proportional framework of the sample of farmers, so there were 30 plasma farmers and 30 self-help farmers, thus the total sample was 60 farmers. Data analysis used is descriptive analysis and multiple linear regression analysis.

RESULTS AND DISCUSSION

Farmer's Characteristics. The plasma farmers had an average age of 47.6 years, the number of family members of 3 - 4 people, the experience of the palm oil cultivation of 22.8 years of land ownership of 4.6 Ha. While self-employed farmers have an average age of 43.1 years, the number of family members 4 - 5 people, experience of palm oil 21.4 years, land area of 3.15 Ha. Adoption of palm cultivation technology as recommended. The plasma farmers have a value for rejuvenation of Rp. 26.269.666 or 61.02%. The cost of seedlings is 48.98%, 95.49% outside of family labor costs, 29.58% for palm oil maintenance. While self-help farmers rejuvenation costs of Rp. 16.783.222 or 39.98%. The cost of seedlings is 51.02%, the labor cost of the family is 4.51%, the maintenance cost is 70.42%.

Household Income. The household income of the farmers is sourced from palm oil, other farm income and income from outside farming. The income of farm households from the source of income of palm oil, other farming and outside farming can be seen in Table 1.

Table 1 – Average Revenue of Oil Palm Farmers, Year 2017

No	Revenue Source	Household Income					
		Smallholders	%	Self-help farmers	%	Average	%
1	Palm Farming	46.967.583	93,36	37.589.364	91,77	42.278.474	92,65
2	Other farms	454.646	0,90	499.883	1,22	477.265	1,05
3	Outside farm	2.888.000	5,74	2.869.000	7,00	2.878.500	6,31
	Amount	50.310.229	100	40.958.247	100	45.634.239	100

Table 1 shows that the average household income of smallholders is around Rp. 50,310,229 per year and self-help Farmers around Rp. 40,958,247 per year, the majority of household income is obtained from oil palm farming, plasma farmers around 93.36% and self-employed farmers around 91.77%. The result of statistical analysis of test of middle value of significance at 95% confidence level. This means that household income of smallholders is significantly different from household income. Self-employed farmers or average household incomes Smallholders are 158.31% above the average household incomes.

In line with the Lestari Eka research, E. (2015) which states that the average income of oil palm farmers is higher than the average income of oil palm farmers self-help. The result of independent sample test shows that the income of plasma farmers is Rp.40.735.794 per hectare per year while the average income of self-farmers is 26.312.996 per two hectare per year.

Cost of Farmers Household Needs. The cost of the household needs of farmers consists of the cost of food consumption and other costs. The cost of food consumption includes the cost to buy rice, side dishes, salt, sugar, coffee / tea, edible oil, kerosene and fruits. Other cost needs include fees for children's education, health, clothing, soap / toothpaste, home improvement, purchase of household furniture, arisan / recreation, social / religious and building taxes. The details of the average cost of household needs of oil palm farmers can be seen Table 2.

Table 2 shows that the average household needs of smallholders is around Rp 43,430,648 per year with the composition for food consumption (49.35%) and other needs 51.41%. Average household needs Self-help farmers around Rp. 42,460,826 per year with the composition for the cost of food consumption (50.65%) and other necessities (48.59%). The result of statistical analysis of the mean value test is significant at 95% confidence level. This means that the average household needs of smallholders is significantly different from the average household needs. Self-farmers or in other words the average cost of household needs Plastic farmers are 112% above the average cost of household needs Self-help farmers.

Jaenuri's research, H (2016) household consumption, especially for food, will continue to increase food consumption in line with increasing income, but to some extent the addition of income no longer causes the increase in the amount of food consumed. If the quantity of needs has been met, then people will usually attach importance to quality or switch to the fulfillment of non-food needs.

Ability of Household Income. The ability of household income is the level of farmers' household income ability to finance their household needs. The level of income ability of households to finance household needs can be seen Table 3.

Table 3 shows that the level of household income capability of smallholders who are able to finance household needs is about 20%, while the income earning rate of self-farming Farmers can afford 0% or the overall income level of household income is about 10%. From the results of statistical analysis of the mean value of middle test at 95% confidence level. This means that the level of household income capability Smallholders are significantly different from households' income earning capacity Self-help farmers, or household income

earning capacity Plastic farmers to finance their household needs is relatively higher than the self-employed Farmer's level of ability.

Table 2 – Average Cost of Palm Oil Households by 2017

No	Cost Description	Cost of Living Needs (Rp)		
		Smallholders	Self-help farmers	Average (Rp)
1	Food Consumption Needs			
a.	Rice	4.791.110	5.051.747	4.921.428
b.	Side dishes	7.152.117	7.586.517	7.369.317
c.	Vegetables	469.017	453.700	461.358
d.	Sugar / salt	610.697	572.607	591.652
e.	Coffee / tea / milk	1.208.900	1.034.323	1.121.612
f.	Vegetable oil	607.200	612.133	609.667
g.	Kerosene	559.187	485.700	528.527
h.	Fruits	551.400	570.600	561.000
i.	Nuts	112.771	99.938	106.354
j.	Tubers	127.967	143.550	135.758
k.	Spices	1.258.500	1.294.717	1.276.608
	Amount	17.448.866 (49,35%)	17.905.532 (50,65%)	17.683.281 (50,02%)
2	Other Needs			
a.	Child education	3.423.867	3.618.333	3.521.100
b.	Health	997.967	952.333	975.150
c.	Clothes	3.105.667	3.179.000	3.142.333
d.	Soap / toothpaste	691.233	591.633	641.433
e.	Home improvement	666.667	633.333	650.000
f.	Home furnishings	986.425	930.941	958.683
g.	Social / religious events	7.196.460	5.824.508	6.510.484
h.	Property taxes	49.496	35.380	42.438
i.	Transportation	8.864.000	8.789.833	8.826.917
	Amount	25.981.782 (51,41%)	24.555.294 (48,59%)	25.268.538 (50%)
	Amount	43.430.648	42.460.826	42.951.819

Table 3 – Farmers Household Income Rate Ability by 2017

No	Level of Household Income Capability	Smallholders		Self-help farmers		Total	
		Household	%	Household	%	Household	%
1	Capable of $Kr \geq 1$	6	20	0	0	6	10
2	Not able to <1	24	80	30	100	54	90
	Amount	30	100	30	100	60	100

Note:

$Kr = (Yt : KB) \times 100\%$

Kr = Ability to pay for living needs (%)

Yt = Household income (Rp / year)

KB = Cost of household needs (Rp / year)

Household income level Farmers who are unable to finance their household needs are around 80% and self-help farmers are 100%, all farmers who are unable to finance their household needs are farmers who are currently reforesting about 11.2%. Farmers who are unable to finance their household needs are farmers who have unprofitable crops whereas, income from intercropping pattern cropping pattern and out-of-farm income is relatively low so it is not enough to finance household needs. Lack of farm household income to finance household needs by saving last year or borrowing money from families, village palm oil collectors or other farmers who will be paid from work outside the farm or after the start of palm oil production.

In contrast to Malik A's research, Murdy S, Nainggolan S (2015), the level of household income earning capacity of households that can afford households is 92.0%, while the income earning rate of farmers is not yet advanced which can afford the household needs of about 74, 29% or the overall level of farmers' household income capability is about 81.67%. From the results of statistical analysis of the mean value of middle test at 95% confidence

level. This means that the income level of farm household income is significantly different from the level of income ability of the farmer's household is not yet developed, or the level of income ability of the farmer's household to finance the household's need is relatively higher than the level of the farmer's ability not yet developed.

Option to Increase Household Income Capability

1. Application of Palm Selective Crop Patterns.

The effort to increase farmers' household income ability can be done through the implementation of the pattern of palm oil crops with food crops and horticulture as recommended by extension workers. Implementation of palm oil cropping pattern Smallholders and self-help farmers can still be improved by planting palm-rice / corn-banana / pineapple-chili pattern as Table 4.

Table 4 – Production and Production Potential of Palm Sela Plant

No	Types of Plants	Smallholders			Self-help farmers		
		Current Production	Production Potential	% Of potential	Current Production	Production Potential	% Of potential
1	Rice	825	1.800	45.83	850	1.600	53.13
2	Corn	320	900	35.56	360	1.000	36.00
3	Vegetables	300	650	46.15	325	700	46.43
4	Turmeric	150	450	33.34	150	650	23.08
5	Ginger	142	300	47.33	160	325	49.23
Amount		41.64			41.57		

In Table 4 it can be explained that the average application of intercropping pattern of new plasma farmers reaches about 41.64% of the potential production pattern of recommended palm crops and self-help Farmers about 41.57% of the potential production pattern of palm oil plantations recommended that it can still increase revenue Households Smallholders are around 58.36% and self-employed farmers are 58.43% of the current farmers' current production. In contrast to research by Lestari Eka, E. (2015) stated that the percentage of agricultural income source outside of palm oil pattern is 13.36% and self-farmer is 14.11% so it can still increase household income of plasma farmers around 86.64 and Self-help farmers around 85.89%.

The potential increase in income and income capability of households of oil palm farmers through the implementation of the pattern of palm oil plant in 2017 can be seen in Table 5.

Table 5 – Potential of Increasing Revenue and Income Capability of Household of Palm Farmer Through Application of Palm Selective Crop Pattern

No	Average Household Income	Smallholders (Rp thousand)	Self-help farmers (Rp thousand)	Average (Rp thousand)
1	Original revenue	16.142	25.554	20.848
2	Potential increase	7.635	9.477	8.556
3	Household income	23.777	35.031	29.404
4	Increased revenue (%)	43.30	37.09	42.20
5	Income capability (%)	51.64	43.14	49.78

In Table 5 it can be explained that the application of good intermediate palm-rice / pineapple / banana-chili pattern will increase household income of 47.30% and farmers around 37.30%, while palm oil intercropping -good / vegetable-turmeric-ginger-kernel will increase household income capability Smallholders about 51.64% is relatively higher than the increase in household income capacity Self-employed farmers around 43.14% or overall will increase household income capability Farmers around 47.39%.

2. Utilization of Spare Time to Work Productive.

The limited source of household income of farmers from on farm, off farm and nonfarm can be overcome by farmers with the utilization of spare time. The allocation of available household working time, working time for households, rest time, working time used for oil

palm business activities, other farming, outside the farmers' farming and household livelihoods can be seen Table 6.

Table 6 – Allocation of Palm Oil Farming Working Time of 2017

No	Description	Allocation of Working Time					
		Smallholders		Self-help farmers		Average	
		Men's Day	%	Men's Day	%	Men's Day	%
1	Time available	948	100	962	100	955	100
2	Time for RT	239	25.21	247	25.68	243	25.45
3	Time off	280	29.54	296	30.77	288	30.16
4	Productive time	265	27.95	301	31.29	283	29.63
5	Free time	164	17.30	118	12.26	241	14.76

³ In Table 6 it can be seen that the average working time available of smallholders and self-employed farmers is about 955 man-days (HKO) per household per year. Time allocation used for household and rest activities Self-help farmers are relatively more than plasma farmers. Time spent on productive activities Farmers are around 301 HKOs or 31.29% while smallholders are around 265 HKO or 27.95%. The result of statistical analysis of the mean value test is significant at 95% confidence level. This means productive working time allocation Self-help farmers are significantly different from the productive working time allocation Smallholders or productive working time Self-farming farmers are relatively higher than the productive working time allocation of smallholders.

The untapped leisure time for this large productive activity can actually be used to increase the income of farm households. Left untapped for productive activities Smallholders are around 164 HKOs and self-employed Farmers are around HK \$ 118 per year. When the spare time plasma farmers and self-help farmers are used to work productively with a certain wage rate will be obtained potential household income. Working opportunities that are available outside the most farming are for the activities of factory workers, candied traders / daily necessities of self-employed wood and stone crafts. The potential increase in income and income capability of households of oil palm farmers through the utilization of leisure time for productive activities in 2017 seen Table 7.

Table 7 – Potential Increase in Income and Profitability of Household Revenue by Oil Palm Farmers through 2015 Leisure Utilization

No	Average Revenue Household	Smallholders (Rp thousand)	Self-help farmers (Rp thousand)	Average (Rp thousand)
1	Original revenue	16.142	25.554	20.848
2	Potential increase	6.330	7.836	7.083
3	Household income	22.472	33.390	27.931
4	Increased revenue (%)	39.21	30.66	34.94
5	Income capability (%)	41.74	36.17	38.96

Table 7 shows that the utilization of leisure time for productive activities will increase household income Smallholders of around 39.21% and self-employed farmers around 30.66% while the use of leisure time productive activities will increase household income capability of smallholders about 41.74% relative Higher than the increase in household income ability Self-employed farmers around 39.17% or overall average will increase farmers' household income capability by about 38.96%.

Average level of household income ability Farmers who can not afford to pay for their living need about 25.71%, with the increase of economic ability through the application of oil palm intercropping pattern around 43.30% and through the utilization of spare time about 39.21%. If done by plasma farmers together, it will increase the household income capability of plasma farmers to about 142.5%, with this increase means that plasma farmers will be able to finance their life needs because the household capability level of farmers is more than 100%.

Average household income earning capacity Self-help farmers who can not afford the cost of living are around 8.0%, with an increase in household income through applying the

pattern of intercropping crops around 37.09% and through the utilization of spare time around 30.66%. If undertaken by self-help farmers collectively, it will increase the household income capacity of self-farmers to about 137.4%, with this increase means household income Farmers are more than 100%.

CONCLUSION AND RECOMMENDATIONS

From the analysis of farmers' household income capability in financing their household needs, the following conclusions can be drawn:

There is a significant difference between the average household income of smallholders and the average household income of self-employed farmers;

There is a significant difference between the average cost of household needs Smallholders with average household needs Self-help farmers. Being 112.5 percent above the average cost of household needs Self-help farmers;

There is a significant difference between the level of household income capability of smallholders and non-farmers. Household income level Plastic farmers who are able to finance their household needs are about 95% relatively higher than self-employed farmers about 87%;

The level of household income capability Smallholders and non-farmers who can not afford to finance their household needs can be improved through the implementation of the pattern of oil palm-rice / pineapple / banana-chili plants, and through the utilization of leisure time used for productive work, Respectively to about 139.6 percent and 144.3 percent thus all farmers will be able to finance their household needs.

In order to empower the household economics of sustainable palm oil farmer it is suggested to need a policy on guidance and counseling from related institutions with efforts to improve the technical capability of oil palm farmers and the provision of financial aid and credit funds to motivate farmers to rejuvenate their oil palm using superior clones.

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