ANALYSIS OF ECONOMIC CAPABILITY OF FARMER'S HOUSEHOLD TO PLANT RUBBER REPLANTING IN SOUTH SUMATERA.

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PART I
INTRODUCTION

1.1 . Background

Currently, Indonesia is the world largest producer of natural rubber with Thailand and Malaysia . Indonesia's natural rubber production in 2011 is estimated at 2,972 million tons , an increase from the previous year which recorded 2.736 million tons . However, the productivity of rubber Indonesia in 2011 only 934 kilograms (kg) per hectare . While 1,450 kg per hectare Malaysia and Thailand 1,705 kg per hectare (kompas.com , 19-09-2012) Of the total production 97 % in exports , while 3 % to meet domestic demand as materials for tire industry materials and other necessities .

Table.1.1
People widely Rubber Plant in South Sumatra Province , the period 2006 – 2011

Regional State	Area (Ha) in Year					
	2006	2007	2008	2009	2010	2011
OKU	49.552	64.132	66.487	64.498	69.505	70.344
OKI	98.303	105.307	110.163	119.537	145.417	148.789
Muara Enim	165.143	170.653	178.493	179.599	219.789	219.789
Lahat	28.995	27.120	22.523	27.879	29.454	30.026
MURA	219.564	221.888	232.425	244.692	329.522	331.244
MUBA	156.271	158.656	154.236	158.338	164.993	165.493
Banyuasin	88.826	83.481	83.481	81.973	89.307	89.307
OKU Selatan	95	1.996	3.072	8.122	4.025	4.025
OKU Timur	46.888	44.911	60.586	67.027	75.024	78.715
Ogan Ilir	17.987	1.084	20.573	19.052	29.265	29.265
Prabumulih	18.304	13.366	18.376	18.376	18.626	18.626
Pagar Alam	659	1.079	1.210	1.294	1.544	1.544
Lubuk Linggau	7.959	9.402	10.426	13.739	13.874	13.874
Empat Lawang	0	0	3.705	3.999	4.579	4.579
Jumlah	898.546	903.075	965.756	1.008.125	1.194.924	1.205.620

Sumber: Biro Pusat Statistik Sumatera Selatan (Sumatera Selatan dalam Angka, 2012).

Table 1.2 .
Area and Production of Rubber Commodity - Based Ownership in South Sumatra , period in 2011 .

Kepemilikan	Luas (Ha)	%	Produksi (Ton)	%	Produktivitas (Ton/Ha/Th)
Perkebunan Rakyat	1.205.620	93,88%	1.113.140	92,46%	0,92
Perkebunan Swasta	60.957	4,75%	71.056	5,90%	1,17
Perkebunan Negara	17.577	1,37%	19.721	1,64%	1,12
Total	1.284.154	100,00%	1.203.917	100,00%	

Sumber: Biro Pusat Statistik Sumatera Selatan (Sumatera Selatan dalam Angka, 2012).

The low productivity of smallholder rubber plantations compared to the private sector and the state , due to the use of capital and technology in private estates and the country is more intensive than in the smallholdings . In addition , due to the low productivity of smallholder rubber also by not using superior clones , lack of maintenance , the age old rubber and the land is not extensive (Harri , 2008) .

Decreasing productivity of rubber and low can be enhanced by improving the use of factor inputs used , such as the use of high quality seeds and fertilizer usage problems production life or old rubber can be done with the replanting of the rubber itself. Replanting has an important role in the management of a plantation . Replanting plantation can be improved and enhanced levels of productivity by means of the use of quality seeds at the time of renewal is done . Seeds were used on plantations can produce more latex rubber seedlings earlier than old (Akiefnawati , Authority , Joshi , & Noordwjik , 2007) . When this is necessary to develop a pattern that can accelerate the increase in the income and welfare of farmers to self-finance and self-help farming communities as much as possible . Farmers are able to carry out the development of self-financing of rubber gardens are intimately associated with the level of income and consumption of farm families , farm family income assuming most of the rubber plantations . According to Eden (2008) farm is an organization of nature (land) , labor and capital devoted to the production in the agricultural field . The

organization stand alone and deliberately cultivated by a person or group of people as managers.

The role of the agricultural sector would be optimal if supported by an integrated system of planning , sustainable , and balanced with the provision of the budget . To strengthen the position of the agricultural sector , the availability of capital for farm businesses is a must. Capital functions at the level of the micro-level (farm) , not only one of the factors of production but also serves to increase the capacity in adopting the technology . In the era of modern agricultural technologies , deployment of capital intensive farming tools for the more modern , capital -intensive deployment , both for agricultural equipment and production facilities will probably be a must .

For agricultural actors , the situation can be re- creates the problem because most of can not afford to fund capital -intensive farming with its own funds . One characteristic of the agricultural community in Indonesia is limited and capital management . Capital in farming can be classified as a form of wealth , cash or goods used to produce something , either directly or indirectly in the production process . According Anggrainie (2011) has the objective of capital formation , namely : (1) to support further capital formation , and (2) to increase production and farm income .

The reality on the ground shows that so much capital assistance for farmers ranging from assistance from the state budget sources / budget or the result of a semi- relief cooperation with foreign parties that were all aimed at strengthening farmers' capital such as Farm Credit (KUT) , Credit Food Security (CTF) or even program Strengthening Venture Capital Group (PMUK) . However , of all the capital that launched services to farmers can not be fully enjoyed by farmers . The low accessibility of farmers to the capital services is also due to the institution designated to distribute capital is not fully entitled to farmers , the interest is too high , security requirements can not be met farmers , liquefaction process that takes a very long , rambling bureaucracy , service seems unfriendly farmers prefer to borrow money from money lenders who do not need complicated requirements and rapid disbursement process . Therefore , it is time to revitalize the services necessary capital through institutional reform of the

bureaucracy , especially if it is related to the farmers due to the fact that Indonesian farmers HR 81.7 % had not completed and partially completed primary school . This fact is what makes the factors why the accessibility of farmers to service low effort .

One of the steps that can promote increased production of Indonesian rubber is rubber land replanting has entered the stage of non-productive (crop over the age of 20 years) , in addition to still do the expansion . Strategy replanting considered quite good for Indonesian rubber plantation that in 2008 had a surface area of approximately 3.5 million hectares . If the land is optimized through renovation , expected production levels will increase by about 20-30 % .

During the renovation is done , practically within a period of five years, the risk of losing large amounts of revenue will be borne by farmers , so it needs to be in anticipation . This will give birth to a greater social impact than when the first planting in the first cycle . Some of the reasons are : 1) the high per capita income which has been received by farmers has changed the pattern of household consumption , and 2) most of the gardens may have been passed down to the next generation . (Elisa , 2013) .

1.2 . Problem Formulation

1. Factors that influence the formation of investment capital for the replanting of the rubber plantation ?
2 Are farmers able to allocate the excess earnings (income that is not consumed) for capital formation ?
3 Are there other business sources to supplement the income of farmers for the establishment of investment capital for the replanting of the rubber plantation ?
4 How is the economic capital formation of households that have the potential for replanting of the rubber plantation investments based on the ability of farmers ?

1.3 . Research Objectives

1 Analyze the factors that influence the formation of investment capital for the replanting of the rubber plantation .

2. Assessing the allocation of residual income (income that is not consumed) for capital formation according to the ability of farmers .Knowing the source of another attempt to increase the income of farmers for capital formation for investment replanting rubber plantation .
3. Formulating economic capital formation of households that have the potential for replanting of the rubber plantation investments based on the ability of farmers .

CHAPTER II
RESEARCH METHODOLOGY

2.1 Location of Research

Research sites were selected based upland topography lowland smallholder rubber plantations in South Sumatra Province . Researchers chose (1) the district of Muara Enim District of Lubai Gelumbang and (2) the District Cambai Prabumulih City , (3) Ogan Ilir and District of New Cape Rambang Kuang , (4) Banyuasin district and sub-district Sukarami Murky River . This location is taken considering the distance is not far from the city of Palembang and easily accessible location

2.2 Sample Withdrawal Techniques

Table 2.1 . Farmers Withdrawal Framework Example

No.	Kabupaten	Kecamatan	Desa	Populasi Petani	Petani Contoh
1	Muara Enim	Gelumbang	Jambu	75	23
		Lubai	Jiwa Baru	200	22
2	Prabumulih	Cambai	Sindur	180	23
3	Ogan Ilir	Tanjung Batu	Tanjung Pinang	140	22
		Rambang Kuang	Beringin Dalam	130	20
4	Musi Banyuasin	Sekayu	Sukarami	155	21
		Sungai Keruh	Kerta Jaya	190	21
	Jumlah			1.070	152

2.6 . Structural Estimation and Model Testing

a. Multiple Regression Model

$$Y = \beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_7X_7+\beta_8X_8+D+e_i \quad \text{.....(1)}$$

The relations among the variables to be estimated functional form , equation (1) is transformed into a double - log equation :

$$\text{Log } Y = \text{Log } \beta_0 + \beta_1 \text{ Log } X_1 + \beta_2 \text{ Log } X_2 + \beta_3 \text{ Log } X_3 + \beta_4 \text{ Log } X_4 + \beta_5 \text{ Log } X_5 + \beta_6 \text{ Log } X_6 + \beta_7 \text{ Log } X_7 + \beta_8 \text{ Log } X_8 + D + e_i \quad \text{.....(2)}$$

Specification :

Y = Shaping of capital for investment in rubber farming (Rp)

βi = β0 = Intercept of regression coefficients of variables

X1 = Household Income (Rp)

X2 = Savings (Rp)

X3 = Consumption Expenditure (Rp)

X4 = Intensification (kg)

X5 = Farmers Formal Education (years)

X6 = Old Farmer employment (years)

X7 = Number of Adult Family Members (people)

X8 = Rubber Farm Land Area (ha)

D = State -owned gardens (1 = owned , 0 = other)

ei = residual

CHAPTER III
RESULTS AND DISCUSSION

In general, the results of the analysis of the factors influencing the formation of investment capital for the replanting of the rubber plantation indicates suitability with an initial guess (pre - Assumptions) theoretically as presented in Table 3.1

Table 3.1

Results of Multiple Regression Model Estimates Double Log
Formation Capital To Invest Replanting

Variable	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
(Constant)	-0.026	1.182	-0.022	0.983[b]
X_1(Pendapatan RT)	0.492	0.199	2.470	0.015[b]
X_2(Tabungan)	0.578	0.152	3.791	0.000[a]
X_3(Pengeluaran/konsumsi)	-0.879	0.293	-2.996	0.003[a]
X_4(Intensifikasi)	-0.007	0.146	-0.048	0.962[b]
X_5(Pddikan Formal Ptn)	1.482	0.156	9.492	0.000[a]
X_6(Lama Bekerja Ptn)	0.464	0.087	5.344	0.000[a]
X_7(Jml Angg Keluarga)	-0.342	0.114	-3.005	0.003[a]
X_8(Luas Lahan Usahatani)	0.439	0.105	4.184	0.000[a]
X_9(Stat kepmilikan kebun)	0.026	0.051	0.501	0.617[b]

R	R square Square	Adjusted R the estimate	std.Error of	F	Durbin Watson
.787	.620	.596	.21033	25.736	2.109

Source : Results of Data Processing
Notes: a . real at the level of 1 % ,
b . real at the level of 5 %

Effect of expenses , intensification and the number of adult family members are negative , thus lowering capital formation (capital formation) through savings replanting rubber plantation by the farmers . Meanwhile , the influence of variables - other variables such as income , savings , education , long work as farmers , land area of rubber and rubber farmers land status is positive . This means that the influence of variables - variables before increasing capital formation (capital formation) through savings replanting of the rubber plantation by the farmers .

CHAPTER IV
CONCLUSIONS AND RECOMMENDATIONS

4.1 . Conclusion

1. Factors that positively influence the formation of investment capital for the replanting of the rubber plantations there are 7 variables , namely : income (X1) , savings (X2) , expenditures (X3) , as Farmer's Work Period (X6) , number of family angggota (X7) and extensive gardens Rubber (X8) , and education (X5) , but the intensification variable (X4) and dummi land status (X9) negative effect .
2. Farmers do not have the ability to cultivate the rubber replanting capital . Farmers can not be consumed , leaving income (household real savings) for capital formation , but in the end does not have the ability to keep the revenue , to invest in the rubber plantation replanting future .
3. Farmers have the potential to form capital for investment replanting that comes from the rubber plantation revenues from other businesses . But have not been able to make the rubber replanting .
4. Capital Formation for the replanting of the rubber plantation investment gradually and discipline (preliminary and revenue collection targets) have not been carried out independently rubber farmers .

4.2 . Suggestions

Policy Implications

1. Required a financial institution (bank and non- bank) that can be trusted by the people .
2. Farmers need to be built motivasinyauntuk implementing capital formation gradual replanting of the rubber plantation and discipline .
3. Institutional Strengthening (gapoktan) to increase productivity of farm and non- farm
4. Government reactivate agricultural extension workers .

5. Pattern of mutually beneficial partnership of farmers and development of local government , provincial and national associations Indonesian export - import .
6. Farmers' income gap when replanting is done strived to utilize spare time .
7. Government Policies for agricultural development that favor farmers .
8. The government needs to help pensertifikasian fields.

Suggestion Advanced Research

1. Activity counseling by agencies plantation , replanting of understanding the rubber plantation farmers .
2. Awareness of rubber plantation farmers would replanting , as well as other factors , in order to produce a more accurate research .
3. The introduction and development of the farming and non- farming , such as the utilization of vacant land , craft businesses , farms)

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