

Household Economic Decisions of Corn Farmers at West Timor, Indonesia

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<http://dx.doi.org/10.12944/CARJ.4.1.08>

(Received: January 04, 2016; Accepted: February 20, 2016)

ABSTRACT

The study aimed to identify factors that influence household economic decisions of corn farmers related to the allocation of time, production activities, corn consumption and policy simulation which can increase household economic of corn farmer. Research was conducted at Tesbatan and Camplong II Village, West Timor, Indonesia. Data were analysed using a system of simultaneous equations. Parameter estimation used Two Stage Least Square (2SLS) and simulation analysis was used for getting alternative policy. The result showed that household economic decisions of corn farmer were affected by the level of wages and farming area. Corn production was influenced by the farming area, the use of labor, urea fertilizer and seeds. Consumption of corn was affected by the price of corn, household income, corn production and the number of household members. Then, Consumption of purchased corn was influenced by household income, corn production and the number of household members. The policy to increase the price of corn was very effective increasing household income but reduce the consumption of corn. Furthermore, the policy of expansion of the scale of farming could increase household income and consumption of corn.

Keywords: Corn, Consumption, Production, Household economic model.

INTRODUCTION

Corn (*Zea mays*) is one of the crops source of carbohydrates and protein that is strategic and economically valuable. The nutrient content of corn is relatively similar to rice even the protein content is higher than rice, so the corn can be used as a staple food in addition to rice. In 100 grams of milled yellow corn contained 361 calories, and 8.7 gr protein, 4.5 gr of fat, while in 100 grams of milled rice contained 360 calories, 6.8 gr protein, and 0.7 gr of fat¹. The other uses from corn is as animal feed, pharmaceutical raw materials, dextrin, adhesives, textiles, cooking oil, and ethanol.

Corn is a plant originally came from Central America which spreaded to Asia and the rest of the

world by Spanish nation². According to Fox, corn entering Timor region, East Nusa Tenggara (NTT) Province of Indonesia, in the 16-17 century³. The Dutch colonial government then promote corn as a food crop to overcome food insecurity and then quickly adopted by West Timor society. The result show that at Kupang Regency there were 53011 agricultural households. A total of 42640 or 80.44% farming households at Kupang Regency cultivate corn⁴. Corn cultivated by farm households due in accordance with the conditions of agro-ecosystems semi arid, socio-economic conditions and socio-cultural society.

Corn consumption per capita of NTT population is 19 kg per capita per year, and is the highest level of corn consumption in Indonesia

followed by Gorontalo Province 8 kg and North Maluku Province 5.4 kg⁵ per capita per year. Thereby corn is still an important food commodity for the people in NTT especially at Regency of West Timor region.

The household decision-making model was first proposed by Chayanov in the Theory of household utility maximization⁶. Becker develop a model farmer households with emphasis on the time allocation of households⁷. Barnum and Squire, said that the presence of the labor market is very influential in the performance model of family farming⁸. Singh et al., developing a basic model of the behavior of farming households with the assumption that households maximizes the utility function from the produced commodities, purchased commodities, as well as leisure⁹.

Research on the topic of economic models of farmer household have been conducted in Indonesia. Kusnadi conducting research with the goal of building an econometrical model of farmer households behavior on the imperfect competition market conditions by entering the shadow price of labor in the family and land to capture the market imperfections¹⁰. Fariyanti et al., using household economic models to analyze the production risk and price as well as the factors that influence the economic behavior of vegetable farmers households into the decision-making production, consumption, and allocation of labor¹¹. It develop models of Barnum Squire to conduct research on household economic decisions of vegetable farmer at the Ngebrong village, Malang, Indonesia. The study found that farmers household consumption expenditure had significant effect on household decision-making process¹².

Household cultivate corn is influenced by various factors, both internal factors and external factors of households. The condition of land and the farming area is an important farming capital and affect the overall activity of farming. Beside that in managing farming the corn farmers faced with limited labor. At certain moments it needed quite a lot of labor so that required additional labor from outside household. In farming beside land and labor are also required other production inputs

such as seeds, fertilizers, and pesticides. The use of production inputs will affect the production, profits and household income.

In the utilization of household income is faced with the choice of whether used for daily activities or used to support farming production activities. Production factors can cause changes in the size of farming profits and revenues. Furthermore major income can influence consumer demand and utilization of production inputs.

Therefore this study aimed to identify factors that influence household economic decisions of corn farmers related to the allocation of time, production activities, and consumption of corn as well as policy simulation which can increase household economic of corn farmer.

MATERIALS AND METHODS

This research was conducted at Tesbatan Village, Amarasi Subdistrict and the village of Camplong II, Fatuleu Subdistrict, Regency of Kupang, Province of NTT, Indonesia. The samples were selected randomly as much as 10 percent from total households in each village. At Tesbatan Village, 37 samples were selected from 368 households where as at the village of Camplong II 77 samples were selected from 778 households in the village, so that the total is 114 respondents of households.

Household Economic Model Specification of Corn Farmers

Household economic model in this study was developed based on the Barnum Squire and Singh et al., model^{8,9}. As it was discussed before, peasant in under taking his farm is mostly faced in to three interrelated problem that he has to solve with. Peasant as a producer has to make a series of decision in term of his farm business, household consumption fulfilling, and labor allocation between on farm and off farm activities.

Household economic model specification of corn farmers arranged in a simultaneous equation models which grouped into four blocks, namely labor block, production block, income block and consumption block as follows

Labor Block

The use of Total Labor For Corn Production (TCL)

$$TCL = LWH + LOH \quad \dots(3.1)$$

The Use of Household Labor For Corn Production (LWH)

$$LWH = a_{1,0} + a_{1,1} AWR + a_{1,2} PCP + a_{1,3} HIC + a_{1,4} CFA + a_{1,5} NHM + a_{1,6} ADI + \mu_1 \quad \dots(3.2)$$

hypothesis : $a_{1,1}; a_{1,3} < 0$; $a_{1,2}; a_{1,4}; a_{1,5}; a_{1,6} > 0$;

The Use of Outside Household Labor For Corn Production (LOH)

$$LOH = a_{2,0} + a_{2,1} AWR + a_{2,2} CFA + a_{2,3} LWH + a_{2,4} SHIC + \mu_2 \quad \dots(3.3)$$

hypothesis : $a_{2,1}; a_{2,3} < 0$; $a_{2,2}; a_{2,4} > 0$;

The use of Labor For Farming (LFF)

$$LFF = TCL + OKFL \quad \dots(3.4)$$

Production Block

The use of Urea Fertilizer for Corn Production

The use of Urea Fertilizer (URF)

$$URF = a_{3,0} + a_{3,1} PUR + a_{3,2} CFA + a_{3,3} NFEX + \mu_3 \quad \dots(3.5)$$

hypothesis : $a_{3,1}; a_{3,3} < 0$; $a_{3,2} > 0$;

The use of Fertilizer for Corn Production (SPF)

$$SPF = a_{4,0} + a_{4,1} PSP + a_{4,2} CFA + a_{4,3} NFEX + \mu_4 \quad \dots(3.6)$$

hypothesis : $a_{4,1}; a_{4,3} < 0$; $a_{4,2} > 0$;

Corn Production Costs (CPC)

$$CPC = (LOH \cdot AWR) + (URF \cdot PUR) + (SPF \cdot PSP) + (CS \cdot PCS) + (OPC) \quad \dots(3.7)$$

Corn Production (CPD)

$$CPD = a_{5,0} + a_{5,1} CFA + a_{5,2} TCL + a_{5,3} URF + a_{5,4} + a_{5,4} SPF + a_{5,5} CS + \mu_5 \quad \dots(3.8)$$

hypothesis : $a_{5,1}; a_{5,2}; a_{5,3}; a_{5,4}; a_{5,5} > 0$;

Income Block

Corn Profit (CPF)

$$CPF = PCP \cdot (CPD - CCF) - CPC \quad \dots(3.9)$$

Farming Income (FIC)

$$FIC = CPF + OKFP \quad \dots(3.10)$$

Household Income (HIC)

$$HIC = FIC + NFIC + SNIC + OIC \quad \dots(3.11)$$

Surplus of Household Income (SHIC)

$$SHIC = HIC - HEX \quad \dots(3.12)$$

Consumption Block

Household Expenditure (HEX)

$$HEX = FEX + NFEX \quad \dots(3.13)$$

Expenditures Non Food (NFEX)

$$NFEX = EEX + HEX + OEX \quad \dots(3.14)$$

Corn Consumption From Farming (CCF)

$$CCF = a_{6,0} + a_{6,1} PPC + a_{6,2} HIC + a_{6,3} CPD + a_{6,4} NHM + \mu_6 \quad \dots(3.15)$$

hypothesis : $a_{6,1} < 0$; $a_{6,2}; a_{6,3}; a_{6,4} > 0$;

Corn Consumption From Purchasing (CCP)

$$CCP = a_{7,0} + a_{7,1} HIC + a_{7,2} PPR + a_{7,3} NHM + a_{7,4} CPD + \mu_7 \quad \dots(3.16)$$

hypothesis : $a_{7,2}; a_{7,4} < 0$; $a_{7,1}; a_{7,3} > 0$;

Names of variables in models are presented in detail in Table 1.

Results of model identification is known that all identified structural equation over identified. Therefore, to estimate the parameters of structural equations in this study used the methods of Two Stage Least Square (2 SLS). To see the model predictive power is used Theil's Inequality Coefficient (U-Theil), and its decomposition. While, to produce policy alternative was used simulation analysis.

RESULTS AND DISCUSSION**Household Economic Model of Corn Farmer**

Results of structural equation estimation in model showed that the coefficient of determination (R^2) varied from 0.3276 until 0.9604. A total of 57.14% equation has a value of R^2 greater than 0.5, and 42.86% the rest has R^2 less than 0.5. The presence of a small determination coefficient because this study use cross section data so the data are relatively not diverse. All F tests are significant, whereas the t test results only 6.89% parameter are not significant¹³⁻¹⁵. From the economic criteria showed almost every parameter estimator from model which built had signs and magnitude

in accordance with the hypothesized according to economic theory. Based on statistical and economic criteria can be concluded that the model which built is quite well to be used.

Influenced Factor on the Household Economic Decision

Labor Behaviour

The labor behavior in this study include the behavior of the use of labor within and outside the household for corn production and the use of labor for off-farm activities. Estimation result of equation parameter the use of labor in the corn farming and the elasticity presented in Table 2.

The behavior of the use of labor within the household for corn production significantly influenced by wage and corn farming area. The increase in farm wages 1 % resulting in the use of labor in the household is reduced 0.99 %. While each additional 1 % of farming area will increase 0.64 % the use of labor in the household. The price of corn factor, household income total, number of household members and index of diversification had insignificant effect on the use of labor in the household for corn production.

The use of labor outside household is significantly influenced by corn farming land area and labor within the household. Each increase of 1 % from farming area can cause the addition of 0.73 % on the use of labor outside household.

Estimation parameter of labor in the household is significant and have positive sign, indicate that the labor within the households with labor outside the household have complementary relationship. This occurs due to the use of labor outside the household are conducted with the labor system of mutual cooperation and help each other between citizens. At the time of planting and harvesting the farming owner invite neighbors or relatives to help. The labor outside the household together with the labor within the household work together to complete the work on the corn farming. This phenomenon also become the cause of income surplus has insignificant influence on the use of labor outside the household.

Production Behaviour

The production behaviors are the use of urea fertilizer and SP-36 and corn production behavior. Result of the equation the use of urea

Table 1: List of Variable Name

CPC	= Corn production costs	CS	=The use of corn seeds
CCP	= Corn consumption from purchases	LEX	= Lighting expenditure
CCF	= Corn consumption from farming	HEX	= Health expenditure
FEX	= Food expenditure	OEX	= Others expenditure
NFEX	= Non food expenditure	EEX	= Education expenditure
HEX	= Household expenditure	PPR	= Purchase price of rice
CPF	= Corn profits	PPC	=Purchase price of corn
URF	= The use of urea fertilizer	PCP	= Price of corn products
SPF	= The use of SP-36 fertilizer	PCPSP	= Corn price / SP-36 price
CPD	= Corn production	PCPUR	= Corn price/ urea price
SHI	= Surplus of household income	PSP	= Prices of SP-36 fertilizer
TCL	= The use of total labor for corn	PUR	= Prices of urea fertilizer
LWH	= The use of labor in household	ADI	= Agricultural diversification index
LOH	= The use of labor outside household	NHM	= Number of household members
LFF	= The use of labor for farming	CFA	= Corn Farming Area
OKFL	= Other kind of farm labor	NLH	= Number of labor in the household
HIC	= Household income	AWR	= Agricultural wage rate
FIC	= Farming income	SNIC	= Social safety net income
OKFPF	= Other kind of farm profit	OIC	= Others income
NFIC	= Non farming income	OPC	= Other production costs

fertilizer and SP-36 which presented in Table 3 had has respecification several times so that obtained parameter estimation which in accordance with the economic and statistical criteria.

The behavior of the use of urea fertilizer and SP-36 for corn production is significantly affected by

the ratio of the price of corn with the price of urea fertilizer and SP-36 and also corn farming area. The estimation parameter value of corn price ratio with fertilizer is significant and has positive value means that households will increase fertilizer use if the price of corn is increase, conversely will reduce fertilizer use if there is an increase in fertilizer prices.

Table 2: Estimation Result of Equation Parameter The Use of Labor Within and Outside The Household On The Corn Farming and The Elasticity

Explanatory variables	Labor Within Household (LWH)		Labor Outside Household (LOH)	
	Parameter Value	Elasticity	Parameter Value	Elasticity
Intercept	25.31944 ^{NS})	-3.53021 ^{NS})		
Agricultural wage (AWR)	-0.0008*)	-0.9857	-0.00004 ^{NS})	-0.1137
Corn farming area (CFA)	46.44305 ^{***})	0.6420	22.88576 ^{***})	0.7295
Agricultural diversification index (ADI)	1.313583 ^{NS})	0.0461		
Number of household members (NHM)	0.711492 ^{NS})	0.1160		
The price of corn products (PCP)	0.002461 ^{NS})	0.2621		
Household income (HIC)	7.59E-08 ^{NS})	0.0133		
Surplus of household income (SHIC)			-4.6E-08 ^{NS})	-0.0244
Labor within household (LWH)			0.304032 ^{***})	0.7011
F-Statistic	19.84 ^{***})		50.13 ^{***})	
R2	0.5265		0.6478	
DurbinWatson test	1.639801		1.819834	

Note: ^{***}) significant at 1 %; ^{**}) significant at 5 %; ^{*}) significant at 10 %; NS = Not Significant;

Table 3: Estimation Result of Equation Parameter the Use of Fertilizer For Corn Farming and The Elasticity

Explanatory variables	The Use of Urea Fertilizer (URF)		The Use of SP-36 Fertilizer (SPF)	
	Parameter Value	Elasticity	Parameter Value	Elasticity
Intercept	-3.45961 ^{NS})		-4.64802 ^{**})	
Corn price/urea Price (PCPUR)	12.54362 ^{***})	1.1043		
Corn price/SP36 Price (PCPSP)			15.78106 ^{***})	1.2031
Corn farming area (CFA)	11.16883 ^{**})	0.5325	11.96158 ^{***})	0.9830
Non-food expenditure (NFEX)	-5.5E-07 ^{NS})	-0.2209	-3.2E-07 ^{NS})	-0.2227
F-Statistic	20.67 ^{***})		31.02 ^{***})	
R2	0.36047		0.4583	
DurbinWatson test	1.72892		1.911046	

Note: ^{***}) significant at 1 %; ^{**}) significant at 5 %; ^{*}) significant at 10 %; NS = Not significant;

Corn farming area has positive sign and significant, showed that the addition of farming area resulted in the increased use of urea fertilizer and SP-36. The estimation parameter of non-food expenditure is not significant but has negative value according to expectations. This indicates there is a tendency addition of non-food expenditure resulted in a reduction in the use of urea fertilizer and SP-36 for the corn production.

The estimation results of equation parameter the corn production which presented in Table 4 indicates that each additional of one hectare corn farming area will increase 2149 kg corn production. Similarly, urea fertilizer significantly affect to corn production, but the use of SP-36 fertilizer is not significant. This condition happen because many farmers which do not give SP-36 fertilizer for corn crop and if it given the amount is still small and not

Table 4: The Estimation Result of Equation Parameter Corn Production and The Elasticity

Explanatory variables	Parameter Value	Elasticity
Intercept	-14.7457 ^{NS})	
Corn farming area (CFA)	2149.194 ^{***})	0.8446
Total of corn labor (TCL)	1.23638 [*])	0.0504
The use of urea fertilizer (URF)	5.00116 ^{***})	0.0412
The use of SP36 fertilizer (SPF)	0.112061 ^{NS})	0.0005
Corn seed (CS)	6.397264 [*])	0.0778
F-statistic	524.47 ^{***})	
R2	0.96044	
DurbinWatson test	2.31409	

Note: ^{***}) significant at 1 %; ^{**}) significant at 5 %; ^{*}) significant at 10 %; NS = Not significant;

Table 5: The Estimation Result of Equation Parameter Corn Consumption From Farming Result and From Purchasing and the Elasticity

Explanatory variables	Corn Consumption from Farming (CCF)		Corn Consumption from Purchasing (CCP)	
	Parameter Value	Elasticity	Parameter Value	Elasticity
Intercept	-180.136 ^{**})		-122.867 ^{NS})	
The purchase price of corn (PPC)	0.022567 [*])	0.3276		
The purchase price of rice (PPR)			0.012753 ^{NS})	4.4812
Household income (HIC)	-0.00001 ^{***})	-0.1719	-1.93E-6 ^{***})	-0.3582
Corn production (CPD)	0.128811 ^{***})	0.4448	-0.00872 [*])	-0.3250
Number of household members (NHM)	96.86665 ^{***})	1.5499	14.20451 ^{***})	2.4533
F-statistic	37.59 ^{***})		13.28 ^{***})	
R2	0.57972		0.32762	
DurbinWatson test	1.367679		2.03388	

Note: ^{***}) significant at 1 %; ^{**}) significant at 5 %; ^{*}) significant at 10 %; NS = Not Significant;

reached the recommendation doze. The use of seed has positive effect on corn production. Results of this study is similar to the findings of Kariyasa, the regression coefficient of fertilizer was positive and significant at 1% probability level in corn farms and Surachmanet et al., corn farming is significantly affected by the use of urea fertilizer and the seed of corn^{16,17}.

Corn Consumption Behaviour

The behavior of corn consumption distinguished on the corn consumption from own farming and corn consumption from purchasing. Results of the analysis which presented in Table 5, showed that corn consumption behavior from farming result is influenced by the total of household income, the purchase price of corn, corn production and the number of household members. Corn consumption behavior from purchasing is significantly affected by the total of household income, the price of rice, the number of household members and corn production.

Total of household income negatively affect on corn consumption both derived from the farming result and purchased with negative income elasticity indicates that corn is inferior goods for households. Results of this study is the same with Ariani and Pasandaran that the elasticity of total expenditure on

corn consumption in NTT is negative and the level of corn consumption is also influenced by household income¹⁸. This finding when compared to Leki who found the income elasticity of demand for corn in rural of West Timor at 0.6380 it can be said that in a time frame of 20 years there has been a shift in food consumption in West Timor from corn as a staple food becomes corn as inferior food¹⁹.

Corn production has positive influence on the consumption of corn from farming result. The more production the more supplies of corn so that households increase consumption of corn from farming result and reducing the consumption of corn from the purchasing. Number of household members has positive influence on the consumption of corn. The more members of the household will increase the consumption of the corn.

The estimation parameter of corn prices has positive sign indicates between purchased corn with the rice there is a substitution relationship through the price mechanism. This condition happened because income is a limiting factor for households, so that increase in rice prices led to reduced real income so that households reduced purchases of rice and adding corn purchases which cheaper but have the relative same nutrient content with rice to

Table 6: Actual Value and Prediction, Decomposition Value of U-Theil in U^M, U^S and U^C

Variable	Actual Value	Prediction Value	(%)	(UM)	(US)	(UC)
TCL	41.1228	41.3187	0.476	0.0000	0.1100	0.8900
LWH	28.6842	28.7465	0.217	0.0000	0.1700	0.8300
LOH	12.4386	12.5722	1.074	0.0000	0.1300	0.8700
LFF	185.2	185.4	0.108	0.0000	0.1000	0.9000
URF	8.3162	8.3154	-0.010	0.0000	0.2500	0.7500
SPF	4.8246	4.8258	0.025	0.0000	0.1900	0.8100
PCP	578752	583222	0.772	0.0000	0.0900	0.9100
CPD	1009	1009.2	0.020	0.0000	0.0100	0.9900
CPF	1666684	1511551	-9.308	0.0500	0.0300	0.9200
FIC	10059201	9897365	-1.609	0.0000	0.0400	0.9600
HIC	15023851	14842756	-1.205	0.0000	0.0700	0.9300
SHIC	6565501	6466099	-1.514	0.0000	0.0700	0.9300
HEX	8458351	8376657	-0.966	0.0000	0.0500	0.9500
CCF	292.2	350	19.781	0.1200	0.1600	0.7200
CCP	27.0702	27.4066	1.243	0.0000	0.2500	0.7500

Note: Variable name can be seen in Table 1

meet the needs of the household. Results of this study similar with the findings of Surachman et al., that rice is a commodity substitution of corn¹⁷.

The Impact of Policy Simulation on the Household Economy

Validation process was performed following Pindyck and Rubinfeld with the criteria of Theil's Inequality Coefficient (U-Theil) as well as the decomposition²⁰. Result of model validation presented in Table 6, seen the average value of U^M and U^S which is close to zero and the value of U^C which is close to one, then it can be concluded that the model is valid and able to be used for simulation analysis.

Policy simulation which performed included expansion simulation 25% farming scale, subsidizes 25% fertilizer and raising 25% product price. Simulation impact on the changes of household economic condition of corn farmer is presented in Table 7.

The policy of expansion 25% corn farming scale causing the use of farming labor and the use of fertilizer increased led to the production of corn

increased so that increase farm profits 19.99%, household income increase 14.86% and surplus income increase 29.19%. Increased production led to increase corn supplies thus increasing consumption of corn from farming result while corn consumption from purchases is reduced.

Policy simulation of subsidize 25% fertilizer price, resulting in the use of urea fertilizer and SP-36 and farming labor increase consequently the production of corn increased by 1.55%. Increased production led to increased corn farming profits 3.03%, household income increases 1.39% and household income surplus increase 2.82%. This policy does not affect the consumption of corn from farming result, but the consumption of corn from purchasing slightly has reduction.

Policy simulation of raising 25% corn price provide incentives for households to increase fertilizer use and the use of labor so that production increases. In addition, the rise in prices of agricultural products directly affected the value of the product thus increasing farming receipts. The increase in production and farming receipts lead to increased farming income 26.16% and income

Table 7: The Impact of Policy Simulation on Household Economical Condition of Corn Farmer

Variable	SIM BASIC	SIM1	SIM2	SIM3
Total of labor for corn production (TCL)	41.3187	20.397	0.035	6.448
Labor within household (LWH)	28.7465	16.663	0.061	7.402
Labor outside household (LOH)	12.5722	28.936	-0.025	4.265
The use of labor for farming (LFF)	185.4	11.327	0.054	1.996
The use of urea fertilizer (URF)	8.3154	13.316	36.814	27.610
The use of SP-36 fertilizer (SPF)	4.8258	24.570	40.095	30.072
The use of corn seed (CS)	583222	22.135	0.205	4.676
Corn Production (CPD)	1009.2	22.711	1.546	1.486
Corn Farming Profit (CPF)	1511551	37.440	3.031	43.617
Farming income (FIC)	9897365	19.990	1.794	26.164
Total of household income (HIC)	14842756	14.865	1.390	19.987
Surplus of household income (SHIC)	6466099	29.185	2.815	37.094
Household expenditure (HEX)	8376657	3.811	0.291	6.781
Corn Consumption from farming (CCF)	350	2.143	0.000	-7.914
Corn Consumption from Purchases (CCP)	27.4066	-22.828	-1.948	-21.366

Note: SIM 1: Expansion 25 % corn farming scale; SIM 2: Subsidize 25 % fertilizer price; SIM 3: Raising 25 % corn price;

total and also surplus of household income increase respectively 19.98 %and 37.09%. This policy led to the consumption of corn from farming result or purchased is reduced.

Based on the three simulations showed that the simulation of raising the corn price gives a large enough impact on the changes in the economic condition of households namely show a significant increase on the total income and surplus of household income. However, this policy led to a decrease in consumption of corn. Decrease in consumption of corn causing household will shift the consumption from corn to other food sources, especially to rice. The subsequent result the level of dependence of households on food from outside become higher. So in the long run will threaten household food security. The policy of expansion of corn farming scale besides increasing household income also increasing corn production thus increasing the consumption of corn from farming result and reducing the consumption of purchased corn. There by for subsistence and semi-commercial farmers scale of priorities needs to be given on the policy of expansion of the farming scale followed by the increase in product prices and fertilizer subsidies.

CONCLUSIONS

1. The behavior of house hold economic decision-making of corn farmers are affected

by various factors as follows:

- a. The behavior of the use of labor in the household and labor outside household is influenced by the level of wages and corn farming area. Between labor in the household and labor outside household there is a complementary relationship because the existence of mutual cooperation working system in working corn farming.
 - b. The behavior of the use of urea fertilizer and SP-36 fertilizer is influenced by the ratio of the corn price with fertilizer priceas well as corn farming area.
 - c. Corn production is influenced by farming area, labor utilization, urea fertilizer and seed.
 - d. Consumption of corn from farming result is affected by the price corn, household income, the production of corn and the number of household members.
2. The policy of the increase in the corn price is very effective to increase household income but reduce the consumption of corn. The policy of expansion of farming scale able to increase household income and consumption of corn from farming result. Thereby for subsistence and semi-commercial farmers scale of priorities needs to be given on the policy of expansion of the farming scale followed by the increase in product prices and fertilizer subsidies.

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