Reinvestment Acceptance Behavior Of Cocoa Farming (Case Study Of Cocoa Farmer In Luwu Regency)

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Abstract : The research aimed to examine cocoa farmer behavior in acceptance reinvestment of cocoa farming in Luwu Regency, South Sulawesi. The research was conducted in Luwu Regency South Sulawesi because it was the highest cocoa producer in South Sulawesi. The population of the research was cocoa farmers who were 1521 householders in Batulappa village South Larompong, Noling village Bupon, Kamanre village, and Sumabu village Bajo sub-district. Sample was taken 10% of the population or 152 householders. To reach the research objective, the research used descriptive statistic analysis. The result of the research showed that from 152 householders, 77 (50.7%) respondents in Luwu reinvested by aside the cocoa sale, 7 (4.6%) respondents made the cocoa sale became the capital then the income was invested to the cocoa farming and 68 (44.7%) respondents borrowed money.Reinvestments of farmer were 3 respondents (2%) increased the land area, 100% respondents procured tools and agricultural machinery (Alsintan) and means production (Saprodi). Reinvestment amount of land increasing was Rp 30 – 50 million (0.25 – 0.5 ha/32% - 46% of cocoa farming acceptance), for alsintan was Rp 271.575 - Rp.502.000 (1% - 10% of cocoa farming acceptance and for saprodi was Rp 1.279.000 – 49.350.250 (9% - 43% of the cocoa farming acceptance).

Keyword: Behavior, Reinvestment Acceptance, Cocoa Farming.

1 INTRODUCTION

Overall. Smallholder plantation in South Sulawesi was 687.340 hectares with 37 commodities. One of commodity which commonly found in the plantation was cocoa with 275.723 hectares land area (40.11%) and 297.370 householders in 22 regencies/cities (estate agency of South Sulawesi, 2011). Luwu Regency was a center of cocoa development in South Sulawesi with 36.762,16 hectares cocoa plantation and 31.702 householders in 21 sub-districts and had productivity level around 644 – 900 kg/ha/year or 802,77 kg/ha/year on average. Cocoa (*Theobroma cacao* L*)* was long-lived crops that started to produce 3 – 4 years after planted, depended on the yielding plant used and the development of the agroecosystem. Potential of superior cocoa such as ICCRI 01 an 02, KW 30, 48 and 162 could reach 2.160 – 3.200 kg/ha/year with weight per dry seed was around 1.10 – 1.36 g/seed (Anonymous, 2012)[1]. Hariyadi's et al research result (2009)[2] showed that problem faced by cocoa farmers in North Luwu was the condition of the plants that had lived for a long time (>20 years), cocoa borer attack, Phytoptora palmivora disease, VSD disease and some production area flooded so many plants could not produce even died.

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Cocoa after 25 years the productivity was half of the production potential and if it was planted on marginal land, the production decreased earlier (Suhendy, 2007)[3]. Furthermore, N.Dewi (2010) said that cocoa farming condition, increasing return to scale. The condition showed that production could be improved by adding input.The fact showed that the development of smallholder plantation had improved but as the time passed, the production decreased significantly, for example in Luwu, South Sulawesi, clove, Malangke orange and cocoa. In the beginning, their production was very high so many farmers became rich because of the high profit. However, the production was significantly decreased which caused the farmers' loss and managed to find new farming. It happened because the farmer behavior in managing the farming depended on too much on nature so most of farming income was invested in non-farming needs. Agricultural investment was an important policy issue because agriculture production was a function from some inputs included the capital level at this time which depended on the previous investment decision. Annual investment decision affected the present and the future production. Thus, every policy which increased investment would affect agriculture result for the next few years. Lack of investment in agriculture such as fertilizer, hybrid seed, or labor caused the low harvest result. Some factors could help to explain why the farmers failed to invest in the profitable potential input. There was a possibility that they were aware of the various risks of adopting new methods or equipments, if they invested and their plants still failed, they would have less money than they did not invest at all. Dean Karla's research (2012) showed that the risk which caused the lack of investment in agriculture in North Ghana was not the capital. It was approved when the farmer was given insurance, they spent a lot of inputs such as chemical material, land procurement, and labors. Farmer probably did not have the needed capital to buy the input and were not capable to get a loan to pay the agricultural investment. Although the cost of new technology could be very high but the use of new technology by farmer could improve the farmer welfare. Therefore, the financial institution and policy maker had to understand the factors that really affected the agricultural investment. Farmer behavior in investing the

farming income was affected by some factors. According to Lewin in Azwar (2000)[4], behavior was characteristic function of individual and environment. Then, Robbins in Bahrin (2008)[5] said that there were four variables that underlay the behavior on the individual level; characteristics of biography, ability, personality, and learning. The research result of Osaka (2006)[6], Oluwasola et al (2011)[7], Amu (2012)[8], and Amu et al (2012)[9] showed that the factors that gave positive and significant impact to the savings level and investment behavior were income, savings amount, knowledge about savings, family size, loan, insurance, and land area. Similar to the research results, Oliver Musshoff (2013) stated that the particular characteristics of socio-demographic and socioeconomic affected the farmer investment behavior.

Formulation of the Problem

According to the previous explanation, the research questions were as follows;

1. How was the characteristic of cocoa farmer in Luwu Regency, South Sulawesi?
2. How did the cocoa farmer behavior in Luwu Regency South Sulawesi in reinvesting the cocoa farming income (land expansion, alsintan and saprodi)?

2. RESEARCH METHODS

Research Location and Sample

Survey and interview were conducted in August – October 2013 in Luwu, South Sulawesi which was chosen according to the highest land productivity among some central area of cocoa development in South Sulawesi. Then, four sub-districts were deliberately chosen; South larompong, Bupon, Kamanre and Bajo. A village of each sub-district was chosen based on the high productivity. Cocoa farmer sample in every village was 10% of the population. The cocoa farmer samples were 37 householders in Batulappa village, 51 householders in Noling village, 43 householders in Kamanre village and 21 householders in Sumabu village, so the total sample was 152.

Data Kind and Analysis

The primary data was collected by structured interview with a questionnaire. The secondary data was used to complete the primary data and as the review data. Descriptive statistic analysis was used to describe the characteristic and reinvestment behavior of farmer respondent. Behavior was how, form and amount of reinvestment acceptance of cocoa farming.

3. FINDINGS AND DISCUSSION

Respondent Characteristic

Individual characteristic was part of personal characteristic and of someone. The characteristic underlay someone's behavior in work situation and others (Rogers and Shoemaker, 1981)[10]. Bahrin (2008)[5] said that the individual characteristics werethe properties of someone and related to life aspects; age, sex, position, social status and religion. In relation to the process of innovation diffusion, Slamet (1992) stated that age, education, social-economic status, relationship pattern and attitude were the individual factors that affected the innovation diffusion process. Lionberger (1960) stated that individual characteristics or personal factors that related to all life aspects and environment were age, education and psychological characteristic. Psychological characteristics were rationality, mental flexibility, orientation in farming as a business and simplicity to accept the innovation. Thus, individual characteristic was the whole characteristics of someone that could differ with the others. In the research, the farmer characteristics observed were age, formal education, farming experience, land area, production number, cocoa faming income and number of family members (Table 1).

Table 1. Respondent Characteristics of Cocoa Farmer in Luwu Regency, South Sulawesi 2013

No	Explanation	Frequency (N=152)	Percentage (%)	Total (%)
1	Age a. 23 -64 years old b. > 64 years	 145 7	 96 4	 100
2	Education Elementary Graduates a. Junior Graduates b. Senior Graduates c. Colleges Graduates	 87 28 30 7	 57 18 20 5	 100
3	Cocoa Farming Experience a. < 10 years b. 10 – 20years c. > 20years	 5 87 60	 3,3 57,2 39,5	 100
4	Number of Family Members a. 0 member b. 1 -3 members c. 4- 6 members d. 7- 8 members	 9 92 45 6	 6 60 30 4	 100
5	Land Area of Farming a. < 0,5 ha b. 0,5 – 1 ha c. > 1 ha	 1 74 77	 0,7 49 50,3	 100
6	Average Production/ha a. < 500 kg b. 500 – 1000 kg c. > 1000 kg	 12 100 40	 8,0 66,0 27,0	 100
7	Cocoa Farming Income a. < 10 million b.10 – 20 million c. > 20 million	 41 84 27	 27,0 55,0 18,0	 100

Source: Primary Data, 2014 (Processed)

Age affected an individual ability to do an activity or business. Age was generally associated with the level of physical and mental maturity. Hawkins et al (1986:7) said that age, sex and education of an individual would affect the behavior. Schaie (Salkind, 1989:2) found that age difference showed the maturity difference; these differences were also caused by the environment and interaction with another individual as a human. From the table 1, most farmers (96%) were around 23 – 64 years old which belonged in productive age. It showed that respondents' cocoa farming could be optimally done by mobilizing available labors. In terms of education, all respondents had various levels of formal education; Elementary school until Colleges with the highest percentage was elementary school (57%) and the lowest was colleges (5%). Age and education level could affect the farmer to make a decision. Young age with high education level would

possibly make the farmer more dynamic and easier to accept new innovation. In that condition, farmer could manage the cocoa farming optimally. Farming experience was an important factor to support the farming success. Farming experience of farmer respondent was 5 – 28 years, with the highest percentage was 10 – 20 years (57,2%) and the average of experience was 20,2 years. Farming experience was a learning process to simplify the adoption and application of technology which was dynamically developed. Resources in a family consisted of three; human, material and time resources (Guhardja et al, 1992)[11]. In this context, the family resource was as same as the household resource. Bryant (Sumarwan et al, 1999)[12] divided a household resource into a human and physical resource. According to Guhardja et al (1992)[11], human elements consisted of number of family members, age, sex, relationship of members in the family and relationship of family to another family and human factors – knowledge, skills and interest. Why number of family members in a family affected the economic ability in a house? Because the existence of human resource as a production factor (labor) in the farmer household was still subsisting which meant relied on a household's ability in a production especially in the land ownership. Number of dependants were a number of people in the household management except the head of family. Number of dependants would affect directly to the availability of labor and consumption. From table 1, it showed that the number of farmer family members was around 0 – 8 people with the highest percentage was 1 – 3 people. According to Hernanto (1998)[13], in Indonesia, land was a rare production factor compared with other factors and the ownership distribution was unequal in society. Therefore, land had some characteristics; (a) land was not producing goods, (b) the area was permanent/constant, (c) land was immovable, (d) could be sold, (e) not decreasing and (f) interest on the land was affected by the productivity. Because of the special characteristics, land was considered as the farming production factor. Farming land area would affect the business scale then it would affect the efficiency of the farming. It was usually found that the bigger land was used for the farming would make the land inefficient. However, in a narrow land, the effort of producing factor was better, sufficient labor performance, and less capital to spend on, so it was more efficient but smaller land area tended to result an inefficient business (Soekartawi, 1993)[14]. Land area would determine the total of production which directly affected the farmer income. In other side, land area also would determine how much the cost of the agricultural input needs which directly affected the farmer income level. From table 1, it explained that the land area of farmer respondents was various around 0,3 hectares with high percentage >1 hectare with 57 farmers (50,3%). Production was associated with how the resource used to make the product. According to Joesron and Fathorrozi (2003), production was the final result of a process or an economic activity by using some inputs. Furthermore, Putong (2002) said that production or produce added the usefulness of a good. The good utility would increase if it had a new advantage or better than the original form. More specifically, production was a company activity by combining many inputs to make output with minimum cost. Production was an acitivty that could make extra advantage or new innovation. The advantages were form, time, place advantage and the advantages combination. Thus, production was not only produce, but also distribute. Commodity was not always a good but a service. According to Salvatore (2001), production referred to transformation of inputs or resources into output or services. Cocoa production was determined by several things such as plant age and applied cultivation techniques. Cocoa age of farmer respondents was around 12 – 30 years of intensication, 3-5 years ofrejuvenation and 2-8 years of rehabilitation. From table 1, it explained that cocoa production of farmer respondents was around 175 – 6800 kg with the highest percentage in 500 – 1000 kg was 100 farmers (66%) with average cocoa production 875 kg/ha/year. The production total was still lower than the production potential 2500 kg/ha/year (Wahyudi et, al 2008)[15]. Farming income was gap between the acceptance and the cost (Soekartawi, 1986)[14]. The amount of income was reward for farmers and their family and the capital they owned. Form and amount of income had similar function, fulfilled the daily needs and satisfied the farmers so they could continue the activity. The income would be used to reach their dreams and fulfilled their duty. Thus, farmers' income would be allocated on the various needs. Analysis of farming income needed an information of whole acceptance and outcome during the current period (Soeharjo and Patong, 1973)[16]. The acceptance was total of product value that was from multiplying the product quantity and the price, while the outcome was all sacrifices of economic resource that was needed to make an output in one period of production. According to the explanation above, so the farming income was directly influenced by production quantity and price and production cost. From table 1, it explained the amount of farmer respondent income was Rp 10 million – 20 million with the average income in 2012 was Rp 14.842.338/ha or Rp 1.236.862/month.

Respondent Reinvestment Behavior

Investment was a decision to postpone consuming the resource or the income in order to improve ability, to add/create living value (income and wealth). In short, investment was defined as an additional net to the existed capital. Another term of investment was capital accumulation. In macroeconomic, investment had the more narrow sense that the amount spent by business sector to add the capital on the particular period. Investment was also in non-physical form especially the improvement of human resource quality. Ahmed in Amu, (2012) [9] placed it in a simple language – "put the money into some businesses to make profit". There were several explanations for that concept but all showed a fact that there were some financial commitments to make a lot of money in the future or to increase someone's purchasing power in the future. Investment was always marked by risk and uncertainty. The risk was a measurable probability of losing money or not getting interest on someone's investment. Pollack and Heighberger (1998) (Amu et al, 2012)[9] tried to distinguish between risk and uncertainty by saying that the risk was measurable but uncertainty was not measurable. The person's behavior in an investment was not determined by the risk and the result but there was another factor such as the preference for risk. An investment instrument that had high result was not always chosen by investor because a high investment had higher risk and no one did like the risk. It meant that every investor had different preferences for the risk. An investment with the high result was not really interesting for an investor because investor hated a risk while the high investment had the higher risk too. In a study of consumer behavior that was also seen as able to explain

consumer behavior in the financial sector explained (Olson and Peter, 2000) in Widayat (2008)[17] that there were several contributed factors that determined the decision making. The factors were grouped in the existed factor or inside and outside factor of the decision maker. The outside factor of decision maker was characteristic of investment type. The inside factor was personal and psychological factor. Reinvestment behavior in the research was how, form and amount of cocoa farming income that was reinvested in the cocoa farming management.

1. How Respondent Reinvest

How respondent reinvest was an action or effort of farmer to reinvest the cocoa farming acceptance in the cocoa farming management. How the respondent reinvested were excluded from the cocoa sale, cocoa sale used as another business capital then the profit was invested to the cocoa farming management and the last way was loan. (Table 2).

Table 2. The Reinvestment of Cocoa Farmer Respondent in Luwu Regency, South Sulawesi, 2013

No.	Reinvestment	Frequency	Percentage (%)
1.	Excluded from the cocoa sale	77	50,7
2.	From other business profit	7	4,6
3.	Get a Loan	68	44,7
Total		152	100

Source: Primary Data, 2014 (Processed)

On table 2, it explained that 77 respondents (50,7%) reinvested by excluding some fund from the cocoa sale, 7 respondents (4,6%) used the cocoa sale as other business capital then the profit was invested in the cocoa farming management and 68 respondents (44,7%) reinvested by getting a loan from another farmer or cocoa seller. A farmer respondent who had < 1 hectare land and had dependants who studied and did not have other income except from cocoa farming, so the acceptance of cocoa farming was enough for consumption and school fee so when the farmer respondent needed a costs for the cocoa farming, farmer had to borrowed because they realized that if the cocoa was not properly maintained, the result would be worse.

2. Form of Respondent Reinvestment

Reinvestment form in this research was designation type of fund from the cocoa sale used to manage and develop the cocoa farming. (Table 3). On table 3, it explained that from 152 respondents, 3 (2%) farmers invested the cocoa farming acceptance to buy 0,3 – 0,5 ha with Rp 30 – 50 million, 100% respondents invested in tools and agricultural machinery (alsintan) and means production (saprodi). Percentage of acceptance invested for alsintan was 1% - 10% or Rp 271.575 – 2.502.000. The most percentage of farmer respondent was around 1% - 3,5% that 110 farmers (72%) with the average investment of tools and agricultural machinery (alsintan) was Rp 479.974/ha/year. The investment in means production (saprodi) was 9% - 43% or Rp 1.279.000 – 49.350.250. The most percentage of farmer respondent was around 20,6% - 32,5% that 82 (54%) farmers with the average investment of saprodi was Rp 4.025.930/ha/year.

Table 3. Reinvestment Form of Cocoa Respondents in Luwu Regency South Sulawesi, 2013

No.	Reinvesment Form	Frequency	Percentage (%)	Total (%)
1.	Land Expansion (% of Revenue)			2,00
	a. 32,0	1	0,66	
	b. 33,0	1	0,66	
	c. 46,3	1	0,66	
2.	Alsintan (% of Revenue)			100
	a. 1 - 3,5	110	72,36	
	b. 3,6 - 6,5	39	25,64	
	c. 6,6 – 10	3	2,0	
3.	Saprodi (% of Revenue)			100
	a. 9 - 20,5	55	36,2	
	b. 20,6 - 32,5	82	54,0	
	c. 32,6 - 43	15	9,8	

Source: Primary Data, 2014 (Processed)

3. Reinvestment amount of Respondent

Reinvestment amount in the research was the amount of the cocoa farming acceptance invested to the cocoa farming management in 2012, that to purchase the agricultural land, means production needs (fertilizer, pesticides, herbicides and labor) and alsintan.

Table 4. Reinvestment Percentage of Cocoa Farming acceptance by the Cocoa Respondent in Luwu Regency, South Sulawesi, 2013

Reinvestment(%)	Frequency	Percentage (%)
10 - 27,9	87	57,2
28 - 43,9	54	35,5
44 - 59,9	9	6,0
60 - 77,0	2	1,3
Total	152	100

Source: Primary Data, 2014 (Processed)

On table 4, it explained that the amount of cocoa farming acceptance invested to the management and development of cocoa farming was Rp 1.602.875 – 101.852.250 or 10% - 77% of the cocoa farming acceptance. The percentage amount of the invested acceptance value was caused by the land purchase by 3 respondents (2%). The most percentage of farmer respondent was 10% - 27,9% that 87 farmers (57%).

4. CONCLUSION AND SUGGESTION

Conclusion

1. From 152 respondents, 145 (96%) farmers were 23 – 64 years old, in the productive age. From education side, all respondents had formal education from the elementary school until the college, with the highest percentage was elementary school (57%). Farming experience of farmer respondent was around 5 – 28 years, with the high percentage 10 – 20 years that 57,2%, with the average experience was 20,2 years. Number of farmer family members was 0 – 8 people with the highest percentage was 1 – 3 people. Land area of farmer respondent was 0,3 – 8,75 hectares with the highest percentage was > 1 hectare that 57 (50,3%) farmers. Cocoa production of farmer respondent was 175 – 6800 kg with the highest percentage was 500 – 1000 kg or 100 (66%) farmers with the average cocoa production was 875 kg/ha/year. The

income amount of respondent cocoa farming in 2012 was Rp 10 – 20 million with the average income in 2012 was Rp 14.842.338/ha or Rp 1.236.862/month.

2. From 152 respondents, 77 (50,7%) respondents reinvested by excluding the cocoa sale and 7 (4,6%) respondents by using the cocoa sale as other business capital and 68 (44,7%) respondents reinvested by getting a loan from another farmer of cocoa seller. The reinvestment of the respondent was 3(2%) respondents reinvested land and 100% ofthe respondents reinvested in alsintan and saprodi. The acceptance amount of the cocoa farming invested for the management and development of cocoa farming was Rp 1.602.875 – 101.852.250 or 10%-77% of the cocoa farming acceptance. The most percentage of farmer respondent was 10% - 27,9% that 87 (57%) farmers.

Suggestion

Farmer group should empower the grants provided by the government as a credit source for farmers who needed funds especially for the purchase of production means.

REFERENCE

[1]. Anonim, 2012. Peremajaan Kakao dengan Teknik Samping(sukamabar.blogspot.com/2012_**10_01**_archive.html).

[2]. Hariyadi, Sehabuddin, U., & Winasa, I. W. 2009. Identifikasi Permasalahan dan Solusi Pengembangan Perkebunan Kakao Rakyat di Kabupaten Luwu Utara Provinsi Sulawesi Selatan**,**(http://repository.ipb.ac.id/. diakses 7 September 2012).

[3]. Suhendy, D., 2007. Rehabilitasi Tanaman Kakao : Tinjauan Potensi,Permasasalahan, Rehabilitasi Tanaman Kakao di Desa Primatani Tonggolobibi. Prosiding Seminar Nasional 2007. Pengembangan Inovasi Pertanian Lahan Marginal. Departemen Pertanian.

[4]. Azwar, 2000. Sikap Manusia, teori dan Pengukurannya. Pustaka Pelajar Offset. Yogyakarta.

[5]. Bahrin. 2008. Karakteristik, Perilaku dan Pemenuhan Kebutuhan Rumahtangga Petani Miskin di Provinsi Bengkulu (http://repository.ipb.ac.id/, diakses 7 Maret 2013).

[6]. Osaka, Joseph Ikechukwu (2006). An Analysis Of Savings AndInvestment Behaviour Of Farmers In Giwa AndSabon-Gari Local Government Areas Of Kaduna Statehttp://kubanni.abu.edu.ng, diakses Maret 2013.

[7]. Oluwakemi Adeola Obayelu (2012).Saving Behavior of Rural Households in Kwara State, Nigeria , http://idosi.org/ajbas/ajbas4%284%2912/3.pdf, diakses 3 Februari 2013).

[8]. Amu, M. E. K. (2012). 'Demographic Influences on Rural Households' Saving and Investment: A Study of Rural Households in the Ho Municipality of Ghana' International Journal of Applied Sociology 2, 2(4): 41-46

[9]. Amu, M. E. K. , Offei, A.C., (2012) Investment Behaviour of Rural Families in Ghana: The Case of Rural Families in the Ho Municipality of the Volta Region. International Journal of Academic Research in Business and Social SciencesOctober 2012, Vol. 2, No. 10 ISSN: 2222-6990

[10]. Rogers, Everett M., F.Floyd. 1987. Memasyarakatkan Ide-ide Baru. Surabaya:Usaha Nasional.

[11]. Guhardja, S.,Helen Puspitawati, Hartoyo, Dwi Hastuti dan D. Martianto. 1992. Manajemen Sumberdaya Keluarga. Bogor: Fakultas Pertanian InstitutPertanian Bogor.

[12]. Sumarwan, U., Hartoyo.,dan Ikeu Tanziha. 1999. The Economic Organization ofThe Household. Bogor: Institut Pertanian Bogor, Jurusan Gizi Masyarakatdan Sumberdaya Keluarga, Fakultas Pertanian.

[13]. Hernanto, F. 1993. Ilmu Usahatani, Penebar Swadaya,Jakarta

[14]. Soekartawi, 1995. Analisis Usahatani. UniversitasIndonesia. Jakarta.

[15]. Wahyudi, T., T.R Pangabean., dan Pujianto. 2008. Panduan Lengkap Kakao: Agribisnis dari Hulu hingga Hilir. Penebar Swadaya. Jakarta.

[16]. Soeharjo, A. dan Patog, D. 1973. Sendi –Sendi Pokok Ilmu Usahatani. Jurusan Sosial EkonomiFakultas Pertanian IPB. Bogor

[17]. Widayat, 2008. Perilaku Investasi Rumah Tangga: Model Dependensi Intensitas Investasi Terhadap Faktor Sosial-Ekonomi-Demografi, Psikologis, Persepsi Risiko dan Literasi Finansial. Proposal Disertasi. Universitas Negeri MalangProgram PascasarjanaProgram Studi Pendidikan Ekonomi.