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Attitude Analysis of Bali Cattle Farmers toward Credit Programs Based on Agroecosystems in Timor Island

Fellyanus Habaora[1], Asnath Maria Fuah[2], Luki Abdullah[3], Rudy Priyanto[4], Ahmad Yani[5], and Bagus Priyo Purwanto[6]
[1)]Student of Post Graduate Programme Animal Production and Technology, Faculty of Animal Husbandry, Bogor Agricultural University, Jl. Agatis, Babakan-Dramaga, Bogor, West Java, Indonesia
[2,3,4,5,6)]Lecturer of Post Graduate Programme Animal Production and Technology, Faculty of Animal Husbandry, Bogor Agricultural University, Jl. Agatis, Babakan-Dramaga, Bogor, West Java, Indonesia

Abstract:- The purpose of this research was to obtain data and information on the attitudes of Bali cattle farmers in four Timor Island agroecosystems, namely agroecosystems of pasture, agriculture, plantation and forest towards business credit assistance for the development of Bali cattle farms. For this reason, this research was conducted from January to December 2018. Determination of the location is purposive representing agroecosystems of pasture, agriculture, plantations, and forests. Respondent determination 5-10% of the number of farmers in each agroecosystem with the number of Bali cattle > 10 tail. Primary and secondary data collection through observation, interviews, and documentation. The data processing method uses a Likert scale with scoring and then analyzed the data descriptively. The results showed that the attitude of farmers to credit assistance showed that Bali cattle farmers in the agroecosystems of pasture and agriculture were still doubtful about the benefits of credit, credit goals, credit procedures and credit risk with the scoring value in each agroecosystem is 4320 and 3564. Whereas farmers in agroecosystems of plantation and forest agreed to credit benefits, credit targets, credit procedures, and credit risk with scoring values in each agroecosystem sequentially 3589 and 3746. Differences in the attitudes of farmers towards credit assistances are strongly influenced by farmers' perceptions which are very much determined by the aspects of farmers age, motivation, and income of the farmers from the Bali cattle business. Farmers in agroecosystems of pasture and agriculture in this research were on average older (42,8 and 43,3 years) compared to farmers in agroecosystems of plantation and forest, namely 41,7 and 42,2 years. Based on motivation, Bali cattle farmers in agroecosystems of pasture and agricultural tend to be socially oriented compared to farmers in economically oriented agroecosystems of plantation and forest. One of the factors that influence income is BEP. Farmers in agroecosystems of plantation and forest in this research have a relatively small cattle BEP but a favorable BEP price. Thus the aspects of the age of the farmer, the motivation of the farmer, and the income of the farmer from the Bali cattle business are factors that influence the farmers' perceptions of the aspects of the credit assistance of Bali cattle farms.

Keywords:- *Farmers Attitude, Credit Assistance, Timor Island Agroecosystem.*

I. INTRODUCTION

The Indonesian government continues to import beef cattle and/or cattle because domestic meat production has not been able to meet the national demand for beef. This is because the productivity of beef cattle in Indonesia is still low with an average population increase rate of 2,9% a year. The main obstacle in increasing the productivity of beef cattle in Indonesia is the difficulty of implementing good farm management.

Region of a consumer in need of beef production in Indonesia a number of 60% is in the provinces of DKI Jakarta, West Java, and Banten with a total cutting needs of 750 beef cattle per day. The beef cattle are imported from Australia, East Java, Central Java, Bali, West Nusa Tenggara and Nusa Tenggara Timur (NTT). Bali cattle contribute around 26,92% to the supply of beef cattle, and one of the highest Bali cattle supply areas for slaughter is NTT (DG PKH 2016).

The Bali cattle production area in NTT is Timor Island with a population distribution of 65,97% of the total cattle in NTT a number of 899.577 cattle (Disnak NTT 2016). But the productivity of Bali cattle on Timor Island is still relatively low due to several reasons, namely: (1) high calf mortality (35-40% per year); (2) high heifer mortality (> 20% per year); (3) slaughter of productive heifer in RPH reaches > 60% of the total slaughter of cattle; (4) feed limitations due to season; (5) traditional livestock raising systems with low production inputs; (6) the occurrence endemic of brucellosis and anthrax with a high prevalence (14,57-40,76%) in the last 10 years; (7) supervision of livestock exports is still weak so that the realization of exports is higher than the stipulated quota; (8) there was a decrease in export weight of Bali cattle from 450 kg/cattle in 1970-1980 to 275 kg per cattle in 2015 (Lole et al. 2013; Mahbubi 2015; Kleden et al. 2015; Disnak NTT 2016; Priyanto 2016) . This situation shows that Bali cattle farmers find it difficult to develop their business, especially with low production inputs causing low production.

Bali cattle farmers on Timor Island generally still keep cattle traditionally with various business objectives, namely breeding, fattening or a mixture of breeding with fattening. Barriers faced by farmers are generally capital constraints. Although credit is very important for livestock development and there are many credit institutions such as banks, cooperatives, and government institutions that introduce credit assistance, but farmers' accessibility to credit is still limited (Mayangsari et al. 2014[a,b]). One factor that influences and determines farmers' access to credit is farmers' perceptions, which are shown through farmers' attitudes that tend to be negative (Wibowo and Haryadi 2006; Riwukore and Habaora 2018).

So far there has been no information and data that can provide a clear picture of the capital aspects to farmers on Timor Island based on varied agroecosystems. Therefore research was conducted using a varied agroecosystem approach to knowing the attitudes of farmers on Timor Island towards credit assistance for the development of Bali cattle. The purpose of this research was to obtain data and information on the attitudes of Bali cattle farmers in the four agroecosystems of Timor Island, namely agroecosystems of pasture, agriculture, plantation, and forest.

II. RESEARCH METHODS

This research was conducted at a location in Timor Island, Nusa Tenggara Timur Province, Indonesia, which was conducted in January-December 2018. The research location was selected purposively representing pasture agroecosystems located in Belu District, Malaka District, and Timor Tengah Utara District. Kupang District and Kota Kupang are areas that represent agricultural agroecosystems and plantation agroecosystems, and Timor Tengah Selatan District represents forest agroecosystems. The research material is farmer information data where the determination of respondents is 5-10% of the number of farmer farmers in each agroecosystem that has > 10 Bali cattle. Based on this technique, the number of respondent farmers for pasture agroecosystems is 127 respondents, agricultural agroecosystem is 102 respondents, plantation agroecosystem is 102 respondents, and forest agroecosystem is 105 respondents. Respondents were interviewed using a questionnaire prepared. Data collection methods are carried out through observation, interviews, and documentation (Nashir 2003). Data obtained from this data collection are primary data and secondary data. Primary data collected, namely the attitude of farmers towards credit assistance programs. Research data were processed and tabulated using Excel programming. Analysis of the data used in this research is descriptive qualitative based on grouping, simplifying, and presenting data such as the use of frequency distribution tables and measurements using a Likert scale. Likert scale is used to measure attitudes, opinions, and perceptions of a person or group about social events or symptoms. The use of this Likert scale connects the variables to be measured by being translated into measurable indicators, as in Table 1.

Variable	Subvariables	Indicators
Attitudes farmers toward credit assistance	1. Credit benefits	1. Welfare improvement
		2. Revenue increase
		3. Success improvement
		4. Business scale increase
		5. Profits improvement
	2. Credit targets	1. Poor farmers
		2. Does not conflict with customs/religion
	3. Credit procedure	1. Easy to understand and implement
		2. It takes a long time and is convoluted
		3. The requirements burdensome farmers
	4. Credit risk	1. Requirements that make it difficult for farmers
		2. Farmers are burdened with repayments of capital and loans
		3. The added costs to raising livestock
		4. Return on old business capital
		5. Implement credit assistance is risky

Table 1:- Variables and subvariables of measurement farmers' attitudes based on agroecosystems in Timor Island

Each answer is related to the form of an attitude statement expressed in categorized words, namely: (a) agree (1), (b) doubt (2) , (c) disagree (1). The measurement of each research indicator uses the basic assumptions of class intervals and clas ranges as follows:

Maximum value = Highets score x number of samples x number of questions

Minimum value = Lowest score x number of samples x number of questions

$$\text{Class ranges} = \frac{\text{Maximum value-Minimum value}}{\text{Number of questions}}$$

Assuming the basic class intervals and class ranges can be made into the following categories.

Agroecosystem	Category	Class Range				
		Benefits	Targets	Procedures	Risk	Overall
1. Pasture	3. Agree	1481,7-1905	592,7-726	890-1143	1481,7-1905	4446-5715
	2. Doubt	1058,4-1481,6	423,4-592,6	636-889	1058,4-1481,6	3176-4445
	1. Disagree	635-1058,3	254-423,3	381-635	635-1058,3	1905-3175
2. Agriculture	3. Agree	1191-1530	477-612	715-918	1191-1530	3571-4590
	2. Doubt	851-1190	341-476	511-714	851-1190	2551-3570
	1. Disagree	510-850	204-340	306-510	510-850	1530-2550
3. Plantation	3. Agree	1191-1530	477-612	715-918	1191-1530	3571-4590
	2. Doubt	851-1190	341-476	511-714	851-1190	2551-3570
	1. Disagree	510-850	204-340	306-510	510-850	1530-2550
4. Forest	3. Agree	1226-1575	491-630	736-945	1226-1575	3676-4725
	2. Doubt	876-1225	351-490	526-735	876-1225	2626-3675
	1. Disagree	525-875	210-350	315-525	525-875	1575-2625

Table 2:- Category and range class of Likert scale measuring farmers perceptions based on agroecosystems in Timor Island

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III. RESULT AND DISCUSSION

➢ *Credit Benefits to Bali Cattle Farmers*

Credit benefit for farmers is to help farmers in providing capital because of limited capital on livestock is an obstacle in the development of beef cattle. Credit benefits will be felt by farmers if the credit increases welfare, income, business scale, profitable, and brings success. Information on the attitudes of Bali cattle farmers based on agroecosystems to the benefits of credit is presented in Table 3. The results showed that the average attitude of farmers in pasture agroecosystems (39,4%), agriculture (45,3%), plantations (50,5%), and forests (54,1%) that credit can improve the welfare of farmers is agreed. The reason for farmers is because the credit will increase their capital for the development of Bali cattle business. The added value of the capital of Bali cattle business has an impact on the value of investment/savings in business ownership thus extending the length of business and affecting the level of welfare. Sumanto (2016) states that the higher investment can be converted by the community in various forms of welfare, namely to pay for labor, increase business capital, and enhance purchasing power, and the ability to pay for their living needs. Welfare is a condition in which a person has the ability to fulfill what he wants.

Then the average attitude of Bali cattle farmers in pasture agroecosystems (42,7%), agriculture (45,3%), plantations (47,9%), and forests (48,1%) that farmers agreed if credit could increase income. The reason for farmers is that the existence of credit will make farmers try to increase livestock production from the increase in the value of added capital so that it has an impact on increasing the income earned. Latisna and Budhi (2018) state that credit will increase the amount of capital where the greater the amount of capital obtained, the higher the level of income obtained. Then explained that the better the credit capital, the income will also increase. Thus the income of farmers can be influenced by the contribution of credit to the size of business capital.

Furthermore, the average Bali cattle farmers in pasture agroecosystems (39,4%), agriculture (51,7%), plantations (44,7%), and forests (56,0%) showed a doubting attitude that credit brings the success in business livestock. The reason for farmers is to feel burdened if the credit is received by farmers. Then farmers are burdened with repayment of loans and loan interest. In addition, farmers feel that credit will increase the cost of raising livestock and is very risky. This is strongly influenced by farmers' perceptions of credit success based on experience, knowledge, motivation, and income from farmers. Wibowo and Haryadi (2006) and Riwukore and Habaora (2019) stated that farmers 'attitudes toward making decisions to accept or reject a technological or policy innovation are strongly influenced by farmers' perceptions. Then explained that farmers' perceptions are strongly influenced by age, experience, motivation, and level of knowledge of farmers.

No.	Credit Benefit	Score	Pasture			Agriculture			Plantations			Forests		
			∑ Person	Total	%	∑ Person	Total	%	∑ Person	Total	%	∑ Person	Total	%
1.	Credit to welfare	3	28	84	39,4	29	87	45,3	34	102	50,5	35	105	54,1
	improvement	2	30	60	28,2	32	64	33,3	32	64	31,7	19	38	19,6
		1	69	69	32,4	41	41	21,4	36	36	17,8	51	51	26,3
	Total 1		**127**	**213**	**100,0**	**102**	**192**	**100,0**	**102**	**202**	**100,0**	**105**	**194**	**100,0**
2.	Credit to revenue	3	30	90	42,7	29	87	45,3	30	90	47,9	30	90	48,1
	increase	2	24	48	22,7	32	64	33,3	26	52	27,7	22	44	23,5
		1	73	73	34,6	41	41	21,4	46	46	24,5	53	53	28,3
	Total 2		**127**	**211**	**100,0**	**102**	**192**	**100,0**	**102**	**188**	**100,0**	**105**	**187**	**100,0**
3.	Credit to success	3	24	72	33,0	15	45	25,3	22	66	35,1	13	39	21,4
	improvement	2	43	86	39,4	46	92	51,7	42	84	44,7	51	102	56,0
		1	60	60	27,5	41	41	23,0	38	38	20,2	41	41	22,5
	Total 3		**127**	**218**	**100,0**	**102**	**178**	**100,0**	**102**	**188**	**100,0**	**105**	**182**	**100,0**
4.	Credit to business scale	3	98	294	86,0	52	156	66,1	73	219	81,7	70	210	79,5
	increase	2	19	38	11,1	30	60	25,4	20	40	14,9	19	38	14,4
		1	10	10	2,9	20	20	8,5	9	9	3,4	16	16	6,1
	Total 4		**127**	**342**	**100,0**	**102**	**236**	**100,0**	**102**	**268**	**100,0**	**105**	**264**	**100,0**
5.	Credit to profits	3	20	60	24,6	22	66	30,8	20	60	29,1	29	87	36,9
	improvement	2	77	154	63,1	68	136	63,6	64	128	62,1	73	146	61,9
		1	30	30	12,3	12	12	5,6	18	18	8,7	3	3	1,3
	Total 5		**127**	**244**	**100,0**	**102**	**214**	**100,0**	**102**	**206**	**100,0**	**105**	**236**	**100,0**
	Total 1+2+3+4+5			**1228**			**1012**			**1052**			**1063**	
	Keterangan			**Doubt**			**Doubt**			**Doubt**			**Doubt**	

Table 3:- Aspects of credit benefits in Bali cattle farmers based on agroecosystem in Timor Island

Next, the average Bali cattle farmers in pasture agroecosystems (86,0%), agriculture (66,1%), plantations (81,7%), and forests (79,5%) showed an agreed attitude if credit increased business scale. The farmer's reason is that credit will increase business capital which can be used to increase the number of livestock kept. An increase in the number of livestock kept will increase the scale of farmers' businesses. This is as stated by Mayangsari et al. (2014[b]) that the amount of credit affects the increase in the amount of investment and farmer capital.

Meanwhile, the attitude of Bali cattle farmers that credit is beneficial for farmers shows that the average attitude of farmers in pasture agroecosystems (63,1%), agriculture (63,6%), plantations (62,1%), and forests (61,9%)) is doubt. The reason for farmers is that the existence of credit causes some of the profits from the livestock business to pay principal and interest installments. In addition, the length of time for cattle raising to be sold is usually not in the same direction as the length of time for the return of capital which can affect the farmer's income or guarantee in obtaining credit. This is consistent with the results of research by Wibowo and Haryadi (2006) who reported that most beef cattle farmers still doubted the success of the beef cattle credit program because most farmers felt burdened with credit

conditions that were considered quite heavy if the assistance was received by farmers.

In general, the average Bali cattle farmers in agroecosystems of pasture, agriculture, plantation, and forest show doubtful attitude that credit can improve the welfare of farmers, credit can increase income, credit can bring success to livestock business, credit increase business scale, and credit will benefit farmers with total scoring scale in each agroecosystem in sequentially 1228; 1012; 1052; and 1063. The condition of this research shows that the attitude of farmers towards beef cattle credit benefits is strongly influenced by the perception of farmers. If farmers are positive about the credit program, Bali cattle farmers will tend to accept the credit program, and if farmers are negative, they will tend to reject the credit program. Nurlina et al. (2015) state that the behavior of farmers is motivated by the attitude of the farmers in question.

➢ *Targets of the Credit Program Assistance*

Information about credit targets for poor farmers in Table 4 in this research shows that the average Bali cattle farmers in the pasture agroecosystem (73,2%), agriculture (58,8%), plantations (61,0%), and forests (92,1%) agreed that the loan credit for poor farmers. The reason for farmers is that credit programs are needed by poor farmers to increase business scale, income, and motivation. This may be influenced by the notion that poor farmers are still difficult to develop their business scale because of limited capital. Credit program assistance for farmers will increase the number of livestock that are sold, thereby affecting the increase in income and motivation of farmers. This is according to what Jelantik reported (2006) that the average Bali cattle ownership in Timor Island is 3,2 per farmer household with the motivation of farmers who tend to be social and part-time business so that a farmer is only able to sell one livestock every 3 years.

No.	Credit targets	Score	Pasture			Agriculture			Plantations			Forests		
			∑ Person	Total	%	∑ Person	Total	%	∑ Person	Total	%	∑ Person	Total	%
1.	Credit to poor farmers	3	80	240	73,2	48	144	58,8	51	153	61,0	93	279	92,1
		2	41	82	25,0	47	94	38,4	47	94	37,5	12	24	7,9
		1	6	6	1,8	7	7	2,9	4	4	1,6	0	0	0,0
	Total 1		**127**	**328**	**100,0**	**102**	**245**	**100,0**	**102**	**251**	**100,0**	**105**	**303**	**100,0**
2.	Credit does not conflict	3	120	360	96,3	93	279	94,3	98	294	97,4	100	300	96,8
	with customs/religion	2	7	14	3,7	8	16	5,4	4	8	2,6	5	10	3,2
		1	0	0	0,0	1	1	0,3	0	0	0,0	0	0	0,0
	Total 2		**127**	**374**	**100,0**	**102**	**296**	**100,0**	**102**	**302**	**100,0**	**105**	**310**	**100,0**
	Total 1 +2			702			541			553			613	
	Information			Agree			Agree			Agree			Agree	

Table 4:- Aspects of credit targets for Bali cattle farmers based on agroecosystem in Timor Island

In relation to the credit target that credit does not conflict with customs and religion, the results of this research indicate the average farmers in the pasture agroecosystem (96,3%), agriculture (94,3%), plantations (97,4%), and forests (96,8%) agree that credit does not conflict with customs and religion. This is because most of the Bali cattle farmers based on the agroecosystem in Timor in this research have a high enough cooperation in providing capital among fellow farmers. Bali cattle farmers who feel they need some money will ask for help (credit) from other farmers without distinguishing the social status of the farmers on the basis of trust, social networks, social norms, and care. The circumstances of this research indicate that farmer social capital is still high on Timor Island in each agroecosystem. Social capital is all things related to cooperation in society to achieve a better quality of life on the basis of trust, social networks, social norms, proactive actions, and care. Social capital in the field of livestock influences the income and empowerment of farmers in the development of beef cattle business (Herawati et al. 2012; Pratisthita et al. 2014; Nafiqoh 2015). Nevertheless, social capital is considered meaningless if the source of credit comes from capital institutions such as banks and cooperatives which are more oriented to certain terms and conditions.

In general, Bali cattle farmers in agroecosystems of pasture, agriculture, plantation, and forest show that the average farmer agrees that the credit program targets poor farmers and does not conflict with customs or religion with the total scoring values in each agroecosystem a sequence is 702; 541; 553; and 613. Factors that greatly influence the attitudes of farmers towards the target of credit programs to Bali cattle farmers based on agroecosystems are social capital. Nafiqoh (2015) and Fathy (2019) state that the formation of social capital is influenced by habits, position (the role of actors), education, socioeconomic class and personal values rooted in ideas of beliefs, norms, and informal networks and believes that social relations are valuable resources where everything is bound together (interconnected). Thus the state of this research shows that Bali cattle farmers in each agroecosystem on Timor Island have relatively strong relationships and attachments and have common interests based on social awareness.

➢ *Credit Procedures*

The attitude of Bali cattle farmers in accepting or rejecting credit programs is influenced by the procedural aspects of granting credit. Farmers tend to refuse if the procedure of extending credit is complicated and burdensome to farmers. Information on aspects of farmers' attitudes towards agroecosystem based credit procedures is presented in Table 4.

The credit procedure information in Table 4 based on the credit aspect is easy to understand and implement shows that the average Bali cattle farmer in the pasture agroecosystem (74,5%), agriculture (65,2%), plantations (67,3%), and forests (94,8%) agreed that credit is easy to understand and implement. The attitude of farmers in this research is influenced by the experience of farmers in receiving information on loan application requirements from capital institutions such as cooperatives, banks, and the government, which is very simply informed, making farmers understand it well. Credit offerings to farmers by capital institutions are adjusted to the target of farmers through a material, teaching aids, and information methods so as to create interest from farmers to receive credit. This is because there are differences in the characteristics of farmers in understanding and receiving information content. This situation is in accordance with some of the results of research that states that the

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suitability of the contents of the information with the target recipient of information has the aim to generate interest in the target, achieve more goals, help overcome language barriers, stimulate the target to carry out magnification, help the target to learn more and more precisely, stimulate the target to forward the message received to others, facilitate the acquisition of information by the target, encourage the desire of people to know, then further explore and ultimately provide a better understanding, and help uphold understanding obtained. (Saswita et al. 2013; Sajow et al. 2014; Surahmanto et al. 2014; Riwukore and Habaora 2019). The aim is to stimulate the interest of farmers to receive credit assistance programs.

Furthermore, information about the credit procedures in Table 4 explain that credit takes a long time and is convoluted shows that the average Bali cattle farmers in agroecosystems of pasture (76,8%), agriculture (78,5%), plantations (78,0%), and the forest (73,5%) agreed that the granting of credit took a long time and was convoluted. The reason for farmers is to apply for credit to capital institutions because of the urgency of capital needs, but capital institutions such as cooperatives, banks, and the government are always oriented towards procedural administrative stages such as surveys, interviews, witnesses of loan guarantors, legal administration, etc, which tend to require time long and convoluted. Farmers' thinking patterns are quite simple, those who borrow, pay, and bear the risk. This is according to the opinion of Nurlina et al. (2015) that one of the social weaknesses of animal husbandry development is that it is more oriented to the present than the future, namely "what is important is that the wish is fulfilled". This situation will be different when farmers apply for loans (credit) to other farmers who only have trust and care that do not require a long time and are convoluted. But in terms of the amount of credit (loans), other farmers only have the amount of nominal that is not too large compared to if the credit comes from capital institutions such as banks, cooperatives, and the government.

No.	Credit Procedures	Score	Pasture			Agriculture			Plantations			Forests		
			∑ Person	Total	%	∑ Person	Total	%	∑ Person	Total	%	∑ Person	Total	%
1.	Credit easy to understand	3	71	213	74,5	48	144	65,2	50	150	67,3	91	273	94,8
	and implement	2	17	34	11,9	23	46	20,8	21	42	18,8	1	2	0,7
		1	39	39	13,6	31	31	14,0	31	31	13,9	13	13	4,5
	Total 1		**127**	**286**	**100,0**	**102**	**221**	**100,0**	**102**	**223**	**100,0**	**105**	**288**	**100,0**
2.	Credit takes a long time	3	76	228	76,8	67	201	78,5	65	195	78,0	60	180	73,5
	and is convuluted	2	18	36	12,1	20	40	15,6	18	36	14,4	20	40	16,3
		1	33	33	11,1	15	15	5,9	19	19	7,6	25	25	10,2
	Total 2		**127**	**297**	**100,0**	**102**	**256**	**100,0**	**102**	**250**	**100,0**	**105**	**245**	**100,0**
3.	Credit requirements	3	61	183	69,3	63	189	79,4	56	168	66,9	32	96	43,4
	burdensome farmers	2	15	30	11,4	10	20	8,4	37	74	29,5	52	104	47,1
		1	51	51	19,3	29	29	12,2	9	9	3,6	21	21	9,5
	Total 3		**127**	**264**	**100,0**	**102**	**238**	**100,0**	**102**	**251**	**100,0**	**105**	**221**	**100,0**
	Total 1+2+3			**847**			**715**			**724**			**754**	
	Information			**Doubt**			**Agree**			**Agree**			**Agree**	

Table 4:- Aspects of credit procedures for farmers based on agroecosystem in Timor Island

Then the credit procedure based on credit terms will burden the farmers according to the information in Table 4 showing that the average farmers in the pasture agroecosystem (69,3%), agriculture (79,4%), and plantations (66,9%) agreed that the requirements credit will burden farmers. Whereas farmers in the forest agroecosystem (47,1%) expressed doubts that the credit requirements would burden farmers. Differences in attitudes among farmers are greatly influenced by the characteristics of farmers, including the age, motivations, experience, income, and access to services of capital institutions. A productive age affects a farmer who will think more mature in running his business. Then the low motivation of farmers from farmers will tend to be negative towards something related to innovation in livestock, in this case, the credit assistance procedure. Past negative experiences of farmers in applying for credit from capital institutions have influenced attitudes to reject credit assistance programs for farmers. Low farmer income tends to influence attitudes to reject credit assistance programs because it is felt to be burdensome for farmers. Whereas access to capital services oriented towards the fulfillment of the ability of farmers tends to be positively responded by farmers, such as interest-free loans by the Regional Government through Dana Pemberdayaan Ekonomi (Dana PEM), or low interest loans such as Kredit Ketahanan Pangan (KKP), Kredit Usaha Peternakan Sapi (KUPS), and Kredit Usaha Rakyat (KUR). Several research results explain that the positive and negative attitudes of farmers towards crediting procedures are strongly influenced by the characteristics of farmers as indicated by the state of perception and behavior of the farmers themselves (Wibowo and Haryadi 2006; Padmaningrum 2012; Mayangsari et al. 2014a; Mayangsari et al. 2014b ; Nurlina et al. 2015; Purnomo et al. 2017; Anggraini and Putra 2017; Lastina and Budhi 2018; Riwukore and Habaora 2018).

In general, the attitude of Bali cattle farmers in agroecosystems in agriculture, plantations, and forests is to agree to Bali cattle credit procedures based on the aspects of credit easy to understand and implement, giving credit takes a long time and is convoluted, and credit terms will burden farmers with a total score on each agroecosystem is 715, 724, and 754. Whereas Bali cattle farmers in the pasture agroecosystem are still doubtful that credit is easy to understand and implement, giving credit takes a long time and is convoluted, and credit terms will burden farmers with a total scoring 847. The state of this research shows that the attitude of Bali cattle farmers in agroecosystems in agriculture, plantations, and forests tends to be negative towards credit procedures compared to Bali cattle farmers in pasture agroecosystems. This difference in attitude is influenced by the effectiveness of lending that is felt by Bali cattle farmers. Lastina and Budhi (2018) stated that the effectiveness of productive that significant toward credit distribution and influencing income, in the end, would influence the positive attitude of the farmers. Conversely, if the effectiveness of lending is unproductive and does not affect the income will affect the negative attitude of the farmer.

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➢ *Credit Risk Aspects*

Information on the aspects of credit risk based on credit conditions burdens the farmers in Table 5 showing that the average Bali cattle farmers in the agroecosystems of pasture (75,7%), agriculture (73,2%), plantations (72,2%), and forests (90,5%) agreed that if the credit terms were burdening the farmers. This is very much influenced by the requirements of collateral that must be fulfilled by Bali cattle farmers in applying for credit to the capital institution, and on the other hand, in general, the farmers do not have these collections. Farmers also reasoned that credit is farmer's privacy towards capital institutions, but the inclusion of guarantor and administrative requirements of Surat Keterangan Domisili from the village/urban village must be fulfilled by farmers causing farmers to be reluctant to these requirements because, by itself, the credit application is not a privacy thing. This is as stated by Asnawi et al. (2017) that the majority of cattle farmers in Indonesia cannot easily access financing because of the condition of farmers who on average do not have this collateral. Then it was also explained that the character of the farmer was closely related and influenced by local cultural values that were owned individually by the farmer such as self-esteem.

Then the average Bali cattle farmers in the agroecosystems of pasture (79,2%), agriculture (81,8%), plantations (83,0%), and forests (75,6%) according to the information in Table 5 stated that they agree if the farmers burdened with repayments on loans and interest. The condition of this research is because farmers are strongly influenced by periods of loan repayments and interest that are not in line with business patterns. Capital institutions generally provide vulnerable loan repayment times and an average interest rate of one month from the time the loan is given. While the length of time to raise Bali cattle for fattening purposes is an average of 6 months and breeding purposes are generally a year. This causes the Bali cattle farmers on the Timor Island in each agroecosystem to tend to be burdened with repayments of loans and interest. This situation causes inefficient use of livestock business credit which results in bad credit (Wibowo and Haryadi 2006).

Furthermore, the average Bali cattle farmers in agroecosystems of pasture (85,1%), agriculture (80,3%), plantations (82,9%), and forests (80,6%) according to the information in Table 5 shows that farmers agree if credit adds to the burden of raising livestock. This attitude is strongly influenced by farmers' perceptions of loan interest which is considered still quite large with a long payback period which also causes farmers to find it difficult to increase income. In addition, farmers also assume that the existence of loan interest with a relatively long return on capital will affect livestock production. Farmers will be more oriented to the loan repayment period so that it can affect the selling price of livestock is low or livestock production decreases. This is consistent with the results of research by Wibowo and Haryadi (2006) that most of the farmers (52,5%) are in agreement with the statement that the credit assistance program will add to the cost burden of beef cattle farming business because they think that the loan interest is still relatively large and long repayment periods will be difficult to increase income and family welfare.

Next, the information in Table 5 about the aspects of credit risk based on credit makes the return on old business capital shows that the average Bali cattle farmer in the agroecosystems of pasture (67,7%), agriculture (81,9%), plantation (64,7%), and forests (73,0%) agree that credit makes a return on old business capital. The average Bali cattle farmer in each agroecosystem on Timor Island stated that they tend to take the longest loan period because the principal and interest installments are getting smaller. This reason is strongly influenced by the business objectives which require 6 months for the cattle fattening business and more than 9 months for the breeding business. However, farmers become negative when accumulated total return on capital and loan interest over the longer credit repayment period so that farmers tend to be negative towards credit. Pertiwi et al. (2018) state that the factors that influence the level of credit repayment are the number of loans and the length of livestock raising. This factor has a negative effect on the smooth return of credit. The greater the number of loans received by farmers, the greater the number of installments and interest that must be paid so that it affects the smoothness of loan payments (Afriyeni 2013). This will be even more negative if the length of a business carried out is not in harmony with the repayment period of the loan/credit (Riwukore and Habaora 2018).

No.	Indicator	Score	Pasture			Agriculture			Plantations			Forests		
			∑ Person	Total	%	∑ Person	Total	%	∑ Person	Total	%	∑ Person	Total	%
1.	Requirements that make it difficult for farmers	3	76	228	75,7	61	183	73,2	58	174	72,2	86	258	90,5
		2	22	44	14,6	26	52	20,8	23	46	19,1	8	16	5,6
		1	29	29	9,6	15	15	6,0	21	21	8,7	11	11	3,9
	Total 1		**127**	**301**	**100,0**	**102**	**250**	**100,0**	**102**	**241**	**100,0**	**105**	**285**	**100,0**
2.	Farmers are burdened with repayments of capital and loans	3	84	252	79,2	72	216	81,8	73	219	83,0	65	195	75,6
		2	23	46	14,5	18	36	13,6	16	32	12,1	23	46	17,8
		1	20	20	6,3	12	12	4,5	13	13	4,9	17	17	6,6
	Total 2		**127**	**318**	**100,0**	**102**	**264**	**100,0**	**102**	**264**	**100,0**	**105**	**258**	**100,0**
3.	The added costs to raising livestock	3	93	279	85,1	68	204	80,3	71	213	82,9	68	204	80,6
		2	15	30	9,1	16	32	12,6	13	26	10,1	12	24	9,5
		1	19	19	5,8	18	18	7,1	18	18	7,0	25	25	9,9
	Total 3		**127**	**328**	**100,0**	**102**	**254**	**100,0**	**102**	**257**	**100,0**	**105**	**253**	**100,0**
4.	Return on old business capital	3	63	189	67,7	68	204	81,9	47	141	64,7	56	168	73,0
		2	26	52	18,6	11	22	8,8	22	44	20,2	13	26	11,3
		1	38	38	13,6	23	23	9,2	33	33	15,1	36	36	15,7
	Total 4		**127**	**279**	**100,0**	**102**	**249**	**100,0**	**102**	**218**	**100,0**	**105**	**230**	**100,0**
5.	Implement credit assistance is risky	3	85	255	80,4	80	240	86,0	83	249	88,9	85	255	87,9
		2	20	40	12,6	17	34	12,2	12	24	8,6	15	30	10,3
		1	22	22	6,9	5	5	1,8	7	7	2,5	5	5	1,7
	Total 5		**127**	**317**	**100,0**	**102**	**279**	**100,0**	**102**	**280**	**100,0**	**105**	**290**	**100,0**
	Total 1+2+3+4+5		**1543**			**1296**			**1260**			**1316**		
	Information		**Agree**			**Agree**			**Agree**			**Agree**		

Table 5:- Aspects of credit risk in farmers based on agroecosystem in Timor Island

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While the information in table 5 about the statement that the implementation of risky credit assistance shows that the average farmers in the agroecosystem of pasture (80,4%), agriculture (86,0%), plantations (88,9%), and forests (87,9 %) agreed that the implementation of credit assistance is risky. The reason for farmers is that credit is risky because credit terms require collateral with a relatively large return on capital interest but are not in harmony with the length of the cattle business. If the capital institution provides long leeway, the return of credit will still influence the accumulation of relatively greater interest. This situation also causes Bali cattle farmers on Timor Island in each agroecosystem to tend to agree if credit is very risky. This is in accordance with Afriyeni statement (2013) that capital institutions are less enthusiastic in extending credit to agriculture (livestock) because of the seasonal nature of commodities (livestock) so that the income earned by farmers is very dependent on the length of time the business objectives and production results, whereas credit payments are made in a manner monthly. Risks in the livestock sector are also relatively high, limited feed conditions, high calf mortality due to systemic endemic diseases, so that livestock productivity decreases.

In general, the average farmers in agroecosystems of pasture, agriculture, plantation, and forest agree that credit is risky because credit conditions burden farmers, farmers are burdened with repayment of loans and interest, credit adds to the cost of raising livestock, credit makes the return of old business capital and the implementation of risky credit. This statement of farmers is based on the total score scale category of Bali cattle farmers in agroecosystems of pasture (1543), agriculture (1296), plantations (1260), and forests (1316). The circumstances of this research indicate that farmers tend to be negative towards credit assistance because farmers assume that credit assistance is very risky. This situation may be influenced by the productivity of farmers and livestock is considered to be still low so that farmers tend to reject the innovation of livestock credit assistance. Efforts to increase the productivity of farmers and livestock will stabilize farmers to positively perceive credit risk. This is consistent with the results of several research which state that the low productivity of farmers and livestock has a negative effect on income. Productivity is a behavior that holds that today must be better than yesterday. Productivity will affect attitude because attitude is not always permanent. The attitude develops when it gets influence, both from within and from outside, both positive and negative. If the farmer is positive about the capital program in the form of credit assistance, the farmer will tend to accept the credit program, on the contrary if the farmer is negative then he will tend to reject the credit assistance (Wibowo and Haryadi 2006; Mayangsari 2014a, b; Lastina and Budhi 2018; Riwukore and Habaora 2018).

➢ *Attitudes Farmers Toward Credit Assistance*

Indicators measuring the attitudes of farmers towards credit aspects are credit benefits, credit targets, credit procedures, and credit risk. Information on these indicators is presented in Table 6. Information in table 6 about farmers' attitudes towards credit shows that Bali cattle farmers in the agroecosystems of pasture and agricultural are still doubted about the benefits of credit, credit targets, credit procedures and credit risk with scoring values in each agroecosystem are 4320 and 3564. Farmers in plantation and forest agroecosystems agree to credit benefits, credit targets, credit procedures, and credit risks with scoring values in each agroecosystem respectively 3589 and 3746.

Variable	Subvariables	Agroecosystems							
		Pasture		Agriculture		Plantations		Forests	
		Value	Information	Value	Information	Value	Information	Value	Information
Attitudes farmers toward cr	Credit benefits	1228	Doubt	1012	Doubt	1052	Doubt	1063	Doubt
	Credit targets	702	Agree	541	Agree	553	Agree	613	Agree
	Credit procedures	847	Doubt	715	Agree	724	Agree	754	Agree
	Credit risky	1543	Agree	1296	Agree	1260	Agree	1316	Agree
	Total	**4320**	**Doubt**	**3564**	**Doubt**	**3589**	**Agree**	**3746**	**Agree**

Table 6:- Persepsi aspek kredit peternak sapi Bali berbasis agroekosistem di Pulau Timor

Differences in the attitudes of farmers towards credit allegedly strongly influenced by farmers' perceptions that are determined by aspects of the age, motivation, and income from the Bali cattle business. Farmers in the agroecosystems of pasture and agriculture in this research were on average older (42,8 and 43,3 years) compared to farmers in agroecosystems of plantation and forest (41,7 and 42,2 years). Based on motivation, Bali cattle farmers in agroecosystems of pasture and agricultural tend to be socially oriented compared to farmers in economically oriented agroecosystems of plantation and forest. One of the factors that influence income is BEP. Farmers in agroecosystems of plantation and forest in this research have a relatively small cattle BEP but a favorable BEP price. Thus the aspects of the farmer's age, motivation, and income from the Bali cattle business are factors that influence the farmers' perceptions of the aspects of the credit assistance of Bali cattle farmers. The results of this research are in line with the stated results of some researchers state that the tendency of farmers to be positive or negative towards the results of credit assistance is influenced by the farmer's age, motivation, and income from the beef cattle business. Whereas the length of education, experience of farmers, area of land ownership, number of workers, the number of cattle owned by farmers and the number of family dependents do not influence the tendency of farmers to be positive or negative about credit assistance (Wibowo and Haryadi 2006; Afriyeni 2013; Asnawi et al. 2017; Pertiwi et al. 2018; Riwukore and Habaora 2018). Thus it can be concluded that farmers' perceptions are a major obstacle in implementing a new method or innovation. Farmers will not try a new method or innovation if farmers are not sure and believe in increasing the effectiveness and benefits, as well as economic profit.

IV. CONCLUSION

The results showed that the attitude of farmers to credit showed that Bali cattle farmers in agroecosystems of pasture and agriculture were still doubted about the benefits of credit, credit targets, credit procedures and credit risk with scoring values in each agroecosystem were 4320 and 3564. While farmers in plantation and forest agroecosystems agree to credit benefits, credit targets, credit procedures, and credit risk with the scoring values in each agroecosystem sequentially being 3589 and 3746. Differences in farmer's attitudes towards credit are strongly influenced by farmer's perceptions which are very much determined of the farmer's age, motivation to raise livestock and livestock income from the Bali cattle business. Farmers in the agroecosystems of pasture and

agriculture in this study were on average older (42,8 and 43,3 years) compared to farmers in plantation and forest agroecosystems (41,7 and 42,2 years). Based on motivation, Bali cattle farmers in agroecosystems of pasture and agricultural tend to be socially oriented compared to farmers in economically oriented agroecosystems of plantation and forest. One of the factors that influence income is BEP. Farmers in agroecosystems of plantation and forest in this research have a relatively small cattle BEP but a favorable BEP price. Thus the aspects of the age of the farmer, the motivation of the farmer, and the income of the farmer from the Bali cattle business are factors that influence the farmers' perceptions of the aspects of the credit assistance of Bali cattle farmers.

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