



Economic Analysis Between Two Different Systems Of Goat Farming Business In Asahan District, North Sumatera

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Abstract

The study was conducted in the Tinggi Raja village and Sumber Harapan Village of Sub district Tinggi Raja, in the Asahan District. Each location study has the same agro-ecosystems. The study was conducted using survey method in year of 2013 by interviewing 15 farmers respondent as cooperators and 15 non-cooperators. Primary data and secondary data were analyzed economically, using descriptive and quantitative tabulation. The purpose of this study was to determine the increase in business of goat breeders for economic analysis. The results showed that the net profit of the business of goats in cooperators breeders at the amount of Rp.8.411.168,83/year, B/C ratio of 1.4. Then for the non-cooperator farmers at the amount of Rp.1.644.051.24/year, B/C ratio of 1.2. This data showed that the benefit of farmer cooperators is higher than the non cooperator breeders. Therefore we need to implement the introduction of technological innovations for the farmer in non-cooperators breeders. For cooperators they could get into commercial business, that resulted in their goats achieving a higher market value in terms of price.

Key words : Improvement, Goat Business, Economic Analysis

Background

Raising goats is an important component in livestock farming in the village, because raising goats on a small scale can help the economy of farmers. Besides, the goat is one of the commodities that are maintained by farmers as a source of protein for the community, as savings, additional revenue utilization of the yard and litter can be used as manure. Goats in North Sumatra (Subdistrict Tinggi Raja) raising with the grazing system by their owner. The nature of the goat fast reproduction and high adaptation to various conditions agro-ecosystems, then goats widely kept in rural Simon, (2010).

Enterprises goat is one source of income for farmer to support the income of farmers in addition to other agricultural businesses. Challenges that are often encountered in the development of livestock business is the ability to meet the needs of feed for the improvement of livestock production and reproduction by way of guidance to farmers whose area has a relatively high potential. Saenab and Waryat (2005), argues that one of the determining

factors in business success of ruminants is a guarantee the availability of quality crops. The availability of agricultural land, vacant land plantations, fields, rice paddies and fields, are potential to provide feed for goat, such as grass or various agricultural wastes that can be utilized.

Business development goats considered very suitable in conditions of agricultural area, because goats are known adaptable to various conditions of rural agro-ecosystems and the complementary efforts in a system of food crops Winarso, (2010). Goat is productive and adaptive enough to local environmental conditions, so its easy to development. This development can be directed out of Java given the magnitude of the natural resources in these areas of considerable potential, Sutama (2004).

Subdistrict of Tinggi Raja in Asahan district is a plantation areas, rubber plantations, palm oil plantation and moor which is a source of fodder, such as, grass *bracilia*, *gliricidia*, *lamtoro*, *calliandra*, star grass, king grass, racket grass, Jampang grass and agricultural waste such as plant

corn, soybeans, peanuts, sweet potatoes, cassava and rice straw. Based on the problems mentioned above, it is necessary to research on operating revenues goats in farmers. The purpose of this paper was to determine the increase in business goat in economic analysis conducted in the group of breeders and non-breeders group.

Materials and Methods

The location and timing of research

This study was done in Taman Rusa Zoo The study was conducted in the Tinggi Raja village and Sumber Harapan Village in Subdistrict Tinggi Raja, Ashan District. Each study site has the same agro-ecosystems. The quation of the two locations have sufficient sources of fodder for goats needs. The distinguishes of two village is farmer group. Tinggi Raja Village has integrated livestock groups, while the Sumber Harapan Village raising livestock expectations alone do not have a group.

The study was conducted by the method of the survey in 2013, against 15 farmer in Farmer group (cooperators) and 15 farmer do not have agroup (non-cooperators) using questionnaire and structured interviews.

Data analysis

According to information from the Department of Agricultural Extension and local husbandry criteria goat population of primary data and secondary data were collected and analyzed using descriptive tabulation and analysis of income economies. Operating revenues goats (Rp / farmer / year), which is based on the difference between revenues and expenses from the calculation (Cost and retun analysis), according to Amir and Kingscheer (1989). Labor (Rp / Day Working Person (DWP)) shows the amount of remuneration derived breeders who poured for 5 hours (one DWP).

The amount of labor allocation can of calculating the total receipts (cash and non-cash) for one year divided by total outpouring of labor (DWP) for one year. Keep in mind the farmers never count the cost of labor. The amount of labor

productivity can be calculated by the formula Rusdiana and Ratna (2009).

Results and Discussion

The mastery of goat on farmers

A stretch of vacant land (moor), palm oil plantations and rubber plantations there is grass and agricultural waste, its affect to the growth raising goat. Number of goats kept by livestock farmers from year to year is relatively fixed. The average mastery of goats kept by the respondent of the livestock farmers cooperators and non cooperators seen in Table.1.

In Table 1 shows that percentage of the Tinggi Raja Village, adult females occupy top positions on average 6.2 head or about 34.06%, and the Sumber Harapan Village on average 2.5 head or about 31.89%. The farmer cooperators and non-cooperators breeders to develop business goat with traditional system, goat development opportunities among others by increasing the number of parent and offspring reproduce the child, the parent ownership scale average of 6.2 and 2.5 head, then a parent per year can produce at least 8% per year of the total family income.

Table 1. Average of goat mastery on farmer.

	location studies					
	Cooperator farmer Tinggi Raja Village n- 15			Non kooperator farmer Sumber Harapan Village n-15		
	Total/ head	aver age	%	Total/ head	aver age	%
Adult female	94	6,2	34,0 6	37	2,5	31,8 9
Young female	41	2,7	14,8 6	16	1,0	13,7 9
Child female	29	1,9	10,5 0	22	1,5	18,9 6
Adult male	38	2,5	13,7 6	16	1,0	13,7 9
Young male	39	2,6	14,1 3	13	0,8	11,2 0
Child male	35	2,3	12,6 8	12	0,8	10,3 4
Total	276	18,2	100	116	7,6	100

Source : Data from the breeder in though (2013)

Thus, the number and productivity of goats adult male and adult female will determine the amount of effort the role of farmers in the farmers' income structure. However, the role of goats male and goats

female are the highest revenue contribution, despite the fact that the farmer has not been attention. This further strengthens the evidence that components of goats in the utilization of vacant land (moor), palm oil and rubber plantations stronger and can adapt to the environment in addition to the components of the plant.

Results of the survey showed that the labor to raising goats effort does not increase. Increasing the number of animals kept 18.2 head by cooperators and 7.6 head by non cooperators. the labor breeder calculated based on the allocation of time spent by each breeder in maintenance effort goats, time spent around 5 hours/working days, counted as 1 DWP, with costs Rp 5000, shown in Table 2.

On the calculation of labor breeder (Rp/WDP/year) in the village of Tinggi Raja farmer cooperators around Rp.1.616.000/year (323.2/WDP/year) and breeder in Sumber Harapan non cooperators farmers around Rp.1.657.000/year (331.42/WDP/ year), where as many types of time used to keep goats on a farmer cooperators Rp.860.000/ year (172/WDP/year) is the least amount of time grazing compared with non-cooperator farmers for Rp.756.000/year (151,2,6/WDP/year) more time spent on searching for forage.

The labor used by farmers in two villages are not influential. The farmers feel lucky, with some reasons that are easy to find grass, easy to maintain and sell goat, and dirt beneficial enclosure for plant fertility.

Tabel.2. The average working time goat breeders used for one year

Type of work	Tinggi Raja Village cooperators n-15					
	Hou r/day	%	ever age n-15	year /day (360)	5 DW P 1 hour	Rp./ year (5.000,-)
Taking forage	22	32,3	1,4	504/5	100,8	504.000
Grazing	36	52,9	2,4	860/5	172	860.000
Livestock care	10	14,7	0,7	252/5	50,4	252.000
Total	68	100	4,5	1.616/6,5	323,2	1.616.000

Type of work	Sumber Harapan Village non cooperators n-15					
	Hou r/day	%	ever age n-15	year /day (360)	5 DW P 1 hour	Rp./ year (5.000,-)
Taking forage	32	45,7	2,1	756/5	151,2	756.000
Grazing	26	37,2	1,7	612/5	122,4	612.000
Livestock care	12	17,1	0,8	288/5	57,8	288.000
Total	70	100	4,6	1.656/6,5	331,4	1.656.000

Description 5 working hours counted as 1 WDP Rp.5000.

Economic analysis of business goat

Raising goat in farmer can be used as a primary business farmers. So that farmer non-cooperators breeders immediately thrust towards commercial business, so that goats are reared gets higher sale value in terms of market goat. In this study the scale used is the average scale of 18.2 head cooperators and averaging scale farmer 7.6 head non cooperators farmers consists of 6.2 females parent stock and 2.5 head adult male to cooperators. While non cooperators breeder adult female 2,4 head and adult male 1.0 head. Cash receipts only concentrated on selling goats per year and not allocated sales of manure, because its everything used for crops fertilizer.

To see the economic analysis of the business goats, which is calculated based on the reception at reducing the costs for maintenance and can be seen in Table 3-4. The data Shows that businesses of goat in the Tinggi Raja village, farmer cooperators cost/year of about Rp.1.665.594.25, - and non-cooperators farmers around Rp.1.665.594.25, - most of the costs for labor and depreciation cage, while the variable costs per year for the business cooperators farmers for Rp.1.636.000, and non-cooperators farmers Rp.1.677.000, - mostly to the cost of purchasing breeding stock.

Net income of farmers cooperators around Rp.8.411.168,83/year, B/C ratio of 1.4, and a non-cooperator farmers around Rp.1.644.051,24/ year, B/C ratio of 1.2. The difference is due farmer cooperators receive special guidance from counselors

agricultural for the implementation of the introduction of technological innovations. While farmer non-cooperator no guidance from counselors agricultural.

Table. 3. Analysis of business economics goat at the farmer cooperators / 2 years

Description	Volume	Average/price (Rp)	Total (Rp)
A. Investment costs and Depreciation			
- Goat cage (unit)	1	2.507.500	-
- Cage depreciation /5 year			501.500
- Equipment and cage (set) Number	1	215.500	215.500
			720.000
B. Variabel costs			
- Family labor (WDP)	323,2	5.000	1.616.000
- Concentrate feed (kg)	-	-	-
- Forage (kg)	-	-	-
- Medicine (Set) Number	1	20.000	20.000
			1.636.000
Total (A + B)			1.665.594.25
C. Sales of goat (head)			
- Adult female	6,2	739.750	4.586.450
- Young female	2,7	421.215,72	1.137.282,44
- Child female	1,9	127.241,93	241.759,96
- Adult male	2,5	1.123.213,31	2.808.033,27
- Young male	2,6	501.245,16	1.303.237,41
- Child male	2,3	126.395,81	290.710,36
Number	18,2	-	10.076.763,08
- Gross income			10.076.763,08
- Net income/year			8.411.168,83
- Pendapatan bersih /year			700.930,73
- B/C			1,4

Proceeds from sale of goat in 2012

Tabel. 4. Analysis of business economics goat at the farmer non-cooperators / 2 years.

Description	Volume	Average/price (Rp)	Total (Rp)
A. Investment costs and Depreciation			
- Goat cage (unit)	1	662.366	-
- Cage depreciation /5 year			132.473,2
- Equipment and cage (set) Number	1	125.750	125.750
			258.223,2
B. Variabel costs			
- Family labor (WDP)	331,4	5.000	1.657.000
- Concentrate feed (kg)	-	-	-
- Forage (kg)	-	-	-
- Medicine (Set) Number	1	20.000	20.000
			1.677.000
Total (A + B)			1.935.223,2
C. Sales of goat (head)			
- Adult female	1,0	724.500	724.500
- Young female	2,5	423.714,28	1.059.285,7
- Child female	0,8	127.071,42	101.657,36
- Adult male	1,0	1.005.500	1.005.500
- Young male	0,8	512.392,85	409.914,26
- Child male	1,5	129.285,71	193.928,56
Number	7,6	-	3.301.051,24
- Gross income			3.301.051,24
- Net income/year			1.644.051,24
- Pendapatan bersih/year			137.004,27
- B/C			1,2

Proceeds from sale of goat in 2012.

Conclusion

Raising of goats economically beneficial to the farmer cooperators around Rp.8.411.168,83/year, B/C ratio of 1.4, and the non-cooperator farmers around Rp.1.644.051,24/year, B/C ratio 1.2. For the farmer non-cooperators immediately pushed towards commercial purposes, so that goats are kept by the farmer gets a higher sale value in terms of the market price of a goat.

References

- Amir.P and Kinscher.H.C. 1989. Conducting on farm animal research. Procedures and Economic Analysis. Singapore National Printer Ltd. Singapore.
- Rusdiana.S., And Ratna Ayu.S. 2009. Contributions of cassava and goats on the income of farmers: Economic Analysis (Case in Bogor) Proceedings of the National Seminar on Animal Husbandry and Veterinary Technology. Research and Development Centre Livestock Bogor Agricultural Research and Development Agency, Ministry of Agriculture, Bogor 13 to 14 August 2010. The case 507-514.
- Sutama.K.I. 2004. Tatang and goat productivity improvement opportunities through technological innovation reproduksi. Prosiding National Lokarya goat Cut, Center for Research and Development of Animal Husbandry Bogor, August 6, 2003, p, 51-60
- Agricultural Statistics. 2010. Department of Indonesia republic agriculture. Data and Information Center of Agriculture. Agriculture department.
- Asahan statistic 2011. In the interim figures. Department of Agricultural Extension and Livestock Asahan. 2011
- Saenab. S., and Waryat. 2005. The development strategy fodder urban region. Proceedings of the National Workshop on Plant Feed. Bogor 16 September 2005, p. 83-36
- Simon.Ginting. 2010. Some acceleration of the development of alternative schemes and spread seeds boerke goats. Proceedings of the National Seminar on Building the Innovation System in Rural Areas. Center for Technology Assessment and Development of Agriculture Bogor, 15-16 October 2009. Book I. It. 246-255
- Winarso.B.2010. Prospects and constraints of agribusiness development goats and sheep in Indonesia. Proceedings of the National Seminar. Increasing Competitiveness of Agribusiness Oriented Farmers Welfare. Social Analysis Center for Economic and Agricultural Policy Ministry of Agriculture, p. 246-264