

Business Analysis Studies of Goat Breeding Integrated with Agribusiness Tofu and Tempe in Kecamatan Candi Kabupaten Sidoarjo

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Abstract: This study aimed to know about business analysis of goat breeding integrated with agribusiness *tofu* and *tempe* in the form *Break Event Point* (BEP), *Payback Period* (PP) and Return Cost Ratio (R/C ratio). A survey method was used in this research. The location and respondents were selected by purposive sampling from total breeders in three villages in which the largest population of goats in Kecamatan Candi is higher than other villages. The villages are Sumokali Village, Sepande Village and Sidodadi Village in Sidoarjo. Questionnaires, interviewing techniques and direct observation by Focus Group Discussion (FGD) were the instruments of data collection. Business analysis was calculated by BEP in rupiah Rp. 2.047.567., PP value 1,22 and RCR value 1,33. The result showed that fattening goat breeding in Kecamatan Candi Kabupaten Sidoarjo was profitable and feasible to be raised.

1 INTRODUCTION

Indonesia is one of agrarian countries in a world rich in natural resources. Indonesia as an agricultural country has a great opportunity to accelerate the pace of development and economic growth through the agricultural sector. Livestock is part of the agricultural sector that has a very important role. Livestock development is part of the development of the agricultural sector that supports the provision of nutritious, highly competitive and creates employment in the field of livestock agribusiness (Pakage, 2008).

Goats are one of the ruminant animals that are maintained by the people of Indonesia, because they have several advantages, easily adapt to the environment and can breed quickly, as a producer of manure and as a producer of meat which is a source of animal protein for the fulfillment of community nutrition (Ritonga, 2018). Sutama (2004) states that the existence of goat breeding business not only can create jobs and business fields, but also provide income and income.

The population of goat livestock in Sidoarjo Regency in 2012 was 297,300, which increased by around 6% in 2012 and increased to 315,000,000 in 2014 (Performance Report of the Sidoarjo Regency

Government in 2014). Based on the number of livestock, Sidoarjo regency is an area with a good number of goats that are spread over sixteen sub-districts and one of them is in the District of Candi. Sidodadi Village, Sumokali Village and Sepande Village are villages in Candi District which have great potential to breed goats with agro-industry businesses such as making *tempe* and *tofu*. Most of the actors of *tempe* and *tofu* agro-industry also have goat breeding.

Goat breeders in these three villages used agro-industry waste as animal feed. Agricultural waste and agro-industry have considerable potential as a source of ruminants feed (beef, buffalo, goat and sheep). (Sundari and Efendi, 2010) stated that the feed material when processed or fermented with the help of certain microorganisms produce high quality fermented feed.

According to (Zulfanita, 2011), an assessment effort on goat livestock business analysis is needed. Although goat breeding is a side business but it is expected to help increase the income of goat breeding, so the welfare of breeders increase. Goat breeding business is a side business of breeder's food crops in rural areas (Murtidjo, 1995). This study is important to give a clear picture on goat breeding business in Kecamatan Candi of Sidoarjo

Regency as a pattern of commercial scale commercial livestock business.

Financial analysis in the farm is very necessary because the determination of the feasibility of a business must be done through business analysis that is by calculating all elements of input costs and all elements of income. Business feasibility study is a study of whether or not a business (investment project) implemented successfully. According to Ibrahim (2003) the feasibility study is a matter of consideration in taking a decision, whether to accept or reject from a business idea or a planned project. Another opinion says that the feasibility study is a matter of consideration in taking a decision whether to accept or reject from a planned idea (Soeharto, 2003).

1.1 Break Event Point (BEP)

Break Event Point (BEP) is a business measurement tool where at a certain point in time with a certain production value, there is a balance between the overall businesses cost and business revenue. BEP is an analytical technique to study the relationship between fixed costs, variable costs, and profit and activity volume.

BEP is also a business break-even point (Soepranianondo et al. 2013). BEP value can be known at the level of production and the price of how a business does not provide profits and not also suffered losses (Soepranianondo et al. 2013). According to Hansen and Mowen (2007) in Soepranianondo (2013), BEP can be calculated using the formula:

$$BEP (\text{production}) = \frac{FC}{P - VC} \quad (1)$$

$$BEP (\text{Price}) = \frac{FC}{1 - \frac{VC}{P}} \quad (2)$$

Description:

FC = Fixed Cost

VC = Variable Cost (variable cost per unit)

P = Price (selling price per unit)

or by the following formula:

$$BEP (\text{production}) = \frac{\text{total cost of production}}{\text{selling price per unit}} \quad (3)$$

$$BEP (\text{price}) = \frac{\text{total production cost}}{\text{total production}} \quad (4)$$

1.2 Payback Period (PP)

Payback Period (PP) is the time period required to pay all expenses incurred in investing a project (Nafarin, 2004). PP is the period required to recover or recover the invested capital. This method takes into account net cash inflows but does not take into account the time value of money.

PPs show a simple relationship between annual returns on investments invested. PP or payback period is an investment valuation method that shows how long investment can be recovered from net cash flow. PP can be calculated using the formula:

$$PP = \frac{\text{Total Investment (Business Capital)}}{\text{1 year Advantages}} \quad (5)$$

1.3 Return Cost Ratio (R/C Ratio)

According to Hansen and Mowen in Soepranianondo et al. (2013) says R/C ratio is the ratio between sales revenue and costs incurred during the production process to produce the product. Livestock business will be profitable if the value of R/C ratio > 1. The greater the R/C ratio, the greater the level of profit to be gained from the business. R/C Ratio can be calculated using the following formula:

$$\frac{R}{C} \text{ Ratio} = \frac{\text{Total Product Sales Receipts}}{\text{Total Production Cost}} \quad (6)$$

This criterion provides guidance that the business is selected or accepted by a decision if R/C Ratio > 1, and vice versa if R/C < 1 will be rejected. In other words if R/C Ratio > 1 then the business is feasible to continue while R/C Ratio < 1 then the business is not worth continuing (Mulyadi, 2001).

2 MATERIALS AND METHODS

This research is a survey research. The purposive sampling method was used in determining the location and respondents. Data were collected using questionnaire technique, interview technique and Focus Group Discussion (FGD). The design of this study is observation by conducting interview techniques based on questionnaires. *Kecamatan*

Candi was chosen as the location of the central development of goat breeding in Sidoarjo.

Based on information, three villages selected were Sepande Village, Sumokali Village and Sidodadi Village. Each village selected respondents are determined at random simple. The respondent requirement is the respondent who has at least 25 goats at the time of research so that the overall total was 25 respondents. The research variables observed in this study were business analysis consisting of BEP prices, BEP production/ units, R/C ratio and PP.

Research was conducted in July and August 2015 to obtain primary and secondary data. Data collection method used is observation method (Marzuki, 2002). Primary data were obtained from interviews with breeders based on a list of questions that have been prepared. Secondary data are data sourced from related government agencies and from publications in the form of research results.

3 RESULTS AND DISCUSSION

This study aimed to know about business analysis of goat breeding integrated with agribusiness *tofu* and *tempe* in the form *Break Event Point* (BEP), *Payback Period* (PP) and Return Cost Ratio (R/C ratio). The results of the analysis of goat breeding business in Kecamatan Candi Kabupaten Sidoarjo can be seen in Table 1.

3.1 Break Event Point (BEP)

BEP is a business analysis technique to study the relationship between fixed costs, variable costs, profit and volume of activities (Ritonga, 2017). The value of BEP can describe the level of production and the price of how much a business does not profit and does not losses (Soepranianondo, 2013). BEP value of the lowest production is 19 heads that is Breeder 1 and BEP value of highest production is 43 heads that is Breeder 5.

Table 1: Business Analysis Goat Breeding Integrated Agribusiness *Tofu* and *Tempe*.

Breeders	BEP Unit (head)	BEP Price (Rp)	R/C Ratio	Payback Period (PP)
Breeder 1	18,58	1.932.602,74	1,35	1,00
Breeder 2	35,61	2.431.871,03	1,15	1,66
Breeder 3	26,04	2.237.791,10	1,23	1,17
Breeder 4	35,28	2.032.683,14	1,30	1,00
Breeder 5	42,16	2.152.126,14	1,14	2,10
Breeder 6	31,21	1.872.602,74	1,60	0,51
Breeder 7	18,64	1.677.506,85	1,61	0,70

Breeder 8	32,85	1.999.583,09	1,40	0,85
Breeder 9	20,71	1.932.534,25	1,45	0,81
Breeder 10	18,95	1.968.045,31	1,37	0,83
Breeder 11	24,87	1.828.706,69	1,37	0,92
Breeder 12	25,10	2.275.085,62	1,27	1,15
Breeder 13	37,81	2.301.352,00	1,22	1,40
Breeder 14	39,11	2.327.821,27	1,07	3,80
Breeder 15	22,91	2.127.005,87	1,22	1,28
Breeder 16	20,51	1.845.570,78	1,46	0,84
Breeder 17	30,86	2.160.171,23	1,28	1,05
Breeder 18	23,07	1.874.315,07	1,30	1,14
Breeder 19	29,24	2.030.821,92	1,39	1,48
Breeder 20	22,81	2.118.444,23	1,23	1,56
Breeder 21	22,70	1.844.456,34	1,41	1,00
Breeder 22	26,62	2.192.083,00	1,28	1,04
Breeder 23	34,80	2.349.315,07	1,15	1,82
Breeder 24	22,78	1.829.306,77	1,45	0,79
Breeder 25	20,47	1.791.404,20	1,56	0,68
Average	27,35	2.045.328,26	1,33	1,22

The BEP value of production depends on the total cost of production and the selling price of the goat in one period. The cost of production is all the expenditure required to produce a product that is valued by money or in other words the cost of production is the value of the expenditure (Suherman, 1991). Boediono (2000) states that acceptance is the value derived from the sale of production. Production costs are divided into fixed and variable costs.

Low production BEPs in Breeder 1 are caused by low production costs and low goat sale prices. High BEP production value of Breeder 5 is due to high production cost and high goat sale price. The average value of BEP production is 27.35 heads. BEP value of production 27.35 heads means goat farm business in District Candi Sidoarjo regency in running its business does not lose and do not get advantage when have goat counted 27 heads.

The BEP value of the lowest price is Rp. 1,760,356, - is Breeder 7 and the highest BEP value is Rp. 2.461.941, - the Breeder 2. The value of BEP price depends on the total cost of production and total production. The BEP value of Breeder 7 low price is due to the total production cost and the low goat population. The high BEP value of the Breeder 2 is due to the high total production cost and the large goat population.

BEP value average price is Rp. 2,082,078, - which means goat breeding business in Kecamatan Candi Kabupaten Sidoarjo in running its business does not lose and do not get profit when sell goat with price Rp. 2,082,078,-. Soepranianondo (2013) states that the fixed cost is a small cost not dependent on the size of the production while the variable cost is the cost required at the time of production.

BEP unit value during one period of goat farm business in Kecamatan Candi Kabupaten Sidoarjo varies depending on the total cost of production and selling price of goat in one period. The average value of BEP production from all breeders is 27 tails. BEP value of the lowest production is 19 heads that is Breeder 1 and BEP value of highest production is 43 heads that is Breeder 5.

BEP value of price during a period of goat breeding business in Kecamatan Candi Kabupaten Sidoarjo varies depending on the total cost of production and the number of goats sold in one period. BEP value of the average price of all breeders is Rp. 2,082,078, -. The BEP value of the lowest price is Rp. 1.760.356, - that is breeder 7 and BEP value of highest price is Rp. 2,461,941 - Breeders 2. If the proceeds of sales obtained are reduced by the cost of a positive value then the profit (Sadono. 2002). Profit can be achieved if the amount of income earned from the business is greater than the amount of expenditure. If

3.2 Payback Period (PP)

The lowest PP value is 0,51 is Breeder 6 is caused by the amount of investment value which is issued efficiently with high profit. Investment is also called capital in the business which is the initial fund to start a business (Prawirokusumo, 1990 in Soepranianondo, 2013).

The highest PP value is 3.80 that is Breeder 14 due to the amount of investment value spent big inefficient with low profit. Benefits of low Breeder 14 are due to high total production costs due to length of goat goats and relatively low goat selling prices. (Sjahrial, 2006) states that payback period is the length of time required by benefit and depreciation to return investment. So it shows the time period needed to recover the issued investment (Soepranianondo, 2013).

The average payback period (PP) on goat breeding business analysis in Kecamatan Candi Kabupaten Sidoarjo is 1.22 which means that the time period needed to recover the invested capital is one and two and a half months. According Sutrisno

(2000), funds used for the business can be met from the owner of the capital itself or from other party loans or debt. Capital calculated here is business capital which is a combination of fixed capital/investment and working capital. Fixed capital is capital that is not used up in one production period and can experience depreciation by type and time like land and building. Working capital is capital out of use in one production period such as cash and seed (Hernanto, 1991).

Kasmir (2014) states that investment purposes are used to finance long-term fixed assets and can be used repeatedly such as the purchase of land, buildings, machinery, vehicles and others. While working capital is defined as capital used to finance day-to-day operations, especially short-term ones such as feed materials, seeds, salaries and operational costs. The greater the investment of goat breeding business, the greater the capital that must be spent.

3.3 Return Cost Ratio (R/C Ratio)

The highest R/C ratio is owned by Breeder 7 is 1.61 and the lowest R/C ratio is 1.07 that is Breeder 14. Breeder 7 has high R/C Ratio due to the high price of goat livestock is balanced with the efficiency production cost. Breeder 14 has a low R/C Ratio due to high production cost due to large population and long maintenance time.

The average R/C ratio obtained by goat breeders in Kecamatan Candi of Sidoarjo regency is 1,33 means that every cost incurred is Rp. 1,000,- then the breeder gets Rp. 1,300,-. Soepranianondo (2013) states that, the high he R/C Ratio the greater the level of profit to be gained from the business.

4 CONCLUSION

The conclusion from the result of the research shows that goat breeding business analysis integrated with agribusiness *tofu* and *tempe* Kecamatan Candi of Sidoarjo Regency is a feasible effort to be implemented with average value of BEP Production 27 heads, average BEP Price Rp. Rp. 2,082,078, -, the average value of PP 1.22 and the average value R/C ratio of 1.33.

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