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Analysis of Business Efficiency Level of Beef Cattle in Banggai District of Central Sulawesi

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ABSTRACT

This study aims to determine the level of efficiency analysis of beef cattle business in breeders. The research was conducted in Batui Sub-district, Banggai Regency, Central Sulawesi in 2015, using completely randomized design (CRD), with control I, treatment II = 1 + supplemented feed 1.00% of body weight, treatment III = 1 + supplement feed 1,50% of body weight and treatment IV = 1 + supplemented feed 2.00% of body weight, according to the weight of the livestock. Primary data obtained from interviews on business units of beef cattle farmers, while secondary data obtained from the relevant agencies. The collected data were analyzed descriptively, qualitatively and economic analysis. The results showed that income on the implementation of supplemented feed of the highest concentrate feed was achieved at 2.00% supplementation level. The gain in control I is IDR13,680,-/head, R/C ratio 1.50 and B/C ratio 0.56, treatment II IDR19,380,-/head, R/C 2.15 and B/C 1.15, treatment III of IDR25,080,-/head, R/C ratio 2.26 and B/C ratio 1.26 and treatment IV of IDR28,500,-/head, R/C 2.44 and B/C 1.44. Financially, beef cattle business is profitable and shows the feasibility of cattle business deserve to be developed.

Keywords: Analysis of economic, Beef cattle, Central Sulawesi, Efficiency of business

Introduction

Increased of production, productivity, and competitiveness of beef cattle business would give many advantages if local resources can be utilized optimally. The lead comparative with the support of innovative technology, competitive advantage, and other conception can provide benefit to the farmers. Currently, most of the traditional farmers merely had beef cattle business as their side business and for saving (Rusdiana and Adawiyah, 2013b), so that required encouragement and direction to the farmers about commercial business with the support and some infrastructures, either capital or calves, and the availability of high-quality feed.

Indonesia had 17,169,045 of beef cattle populations in Central Sulawesi in 2015. During last five years (from 2011 to 2015), it was about 230.682 to 299.485 populations, increased about 19,08% (Statistik Pertanian, 2015). Slaughterers in Indonesia had slaughtered beef cattle in 200 to 250 kilograms of early weight, or before it should be, due to economic considerations. Whereas, they would gain at least 10 to 30% of additional meat when it is being fattened or postpone to be slaughtered. This great potential can be achieved when high quality of calves and feed animals are available so that the potential genetic of the cattle can be expressed maximally. Feed cost would be equal to the sales price of cattle, thus can be sold at competitive prices. The cattle breeds that raised by the farmers in Central Sulawesi are Donggala, Bali, Ramon and Peranakan Ongole (PO). The purpose of this business is not only to meet the requirement of meat in domestic area but also to supply in wider area. About 12.000 head of cattle (20 to 25%) had been distributed to East Kalimantan every year (Dinas Peternakan Provinsi Sulawesi Tengah, 2014).

This condition will stabilize the business of beef cattle when supported by the adoption of technology, so that increase the productivity and ensure the sustainability of business investment. The provision of cattle farm infrastructure is one of the strategic ways in the development of beef cattle policy (Yusdja and Ilham, 2010; Rini, 2014). It cannot be separated with the fact that the farmer has not been able to feed the cattle with the high quality of feed animal. Furthermore, the other way to enhance the additional value of this business is improving land as a place to grow forage. The farmers need to make changes to better business management and utilizing good quality of forage, waste food crops and the addition of concentrates.

Beef cattle farm are raised by the farmers either in a large or small scale and scattered in many different places. Based on Ministry of Agriculture and Plantation Central Sulawesi, waste

of food crops and plantations are potential to be used optimally as alternative feed for ruminant, these are 1.536.471 tons/year of rice straw, 102.432 tons/year of rice bran, 37.418 tons/year of mackerel, corn 456.052 tons/year of straw, 6.152 tons/year of soybean straw, 87.364 tons/year of coconut waste, 544.569 tons/year of cocoa waste, and 777.007 tons/year of palm oil waste (Hidayat, 2014). The success of a business cattle farm can be measured by many ways or indicators.

The success of beef cattle business can be calculated by measuring the efficiency of the raised business. Mayulu *et al.* (2010) suggest that beef cattle business can be built up with the support of the strategic policy, which includes three major dimensions of agribusiness: market policy inputs, cultivation, and marketing involves the governments, private sector, and the farmers. Based on the issues above, a method of ration preparation has not be used optimally. The better of giving appropriate feed to cattle, and then productivity and economic value will be increased.

In addition to utilizing crop waste and forage, the farmers also attempted to provide additional feed concentrates that able to increase the productivity of beef cattle. Currently, beef cattle business becomes more competitive. In order to be able to compete in the free market economy, the farmers in Central Sulawesi might have good knowledge about beef cattle business management. One of the solutions to increase productivity is improving the efficiency level of the beef cattle business. Central Sulawesi is not only the center of beef cattle production but also as the granary and has potential to develop beef cattle business. This research aims to determine the level of efficiency analysis of beef cattle business in Banggai Regency, Central Sulawesi. The results of this research could use as a consideration to the police maker, effective, efficient and can be proposed economically.

Materials and Methods

Approach problem

Mostly, the farmers in Batui subdistrict, Banggai regency, Central Sulawesi have kept their cattle by grazing it during a day or put it into the pen. At this time, having a cattle farm is not profitable for the farmers because they had the farm as a side business and only for saving. Characteristic of the cattle farm in this area is breeding and fattening.

The farmers could look for feed easily both dry and rain season, also in the other time. This circumstance is supported by availability of land for growing forage and the labor for taking care the animals. Dewi *et al.* (2010) stated that development of human resource is a process to upgrade the knowledge, creativity, and skills of farmers in improving their business. That becomes important for the farmers related to acceptance of technological innovation application to support the beef cattle business, so that can achieve optimal profits. Huffman (2000) suggested that to adopt the technology, the farmers needed to obtained training and experience raising, so they do not have to follow the formal education.

According to Wei (2001), the farmer's activity, human resources, and farm labors are fundamental to balance the business management. The beef cattle business is the backbone of the society, hence become the economic drivers in Banggai Regency, Central Sulawesi. Beef cattle business may increase if supported with facilities and infrastructure, also the willingness of farmers in raising the business.

Time and location

This research was done in Batui sub-district, Banggai regency, Central Sulawesi in 2015, in the beef cattle farmers using survey method. This study was conducted to determine the livestock production of beef cattle based on feed technology innovation and beef cattle production system by the farmers. Survey method began with monitoring activity through a survey using questionnaires and held in-depth interview with the competent stakeholders to obtain the description related to the production system, beef cattle business and development strategies of beef cattle based on local resources.

The availability of feed was highly enough, since this location was about agricultural land and empty land, besides the place of grazing cattle. The data collected in this study were primary and secondary data. The primary data were collected by using 40 distributed questionnaires of the respondent. Meanwhile the secondary data were obtained from Department of Agriculture, published research, journals, proceedings, assessment and other support data that concerns with the title above.

Methods of data analysis

Method of analysis that used in this study was a technical condition on a beef cattle farm. The business efficiency level of cattle farm can be financially calculated by its profitability. According to Soeharsono *et al*. (2014b), feed factors could affect the growth of beef cattle both breeding and fattening. Growth of beef cattle could be gained by utilizing high quality concentrates as an additional feed, considered to technical, economical, and availability feed aspects. Primary and secondary data were analyzed in quantitative descriptive and economically ways. This research used additional feed supplements which compose of rice bran and dried coconut meal with different levels for the beef cattle business.

This research used completely randomize design (CRD) with calves. Supplement feed has given during 4 months with each treatment:

I = *Existing* (control) on the calves
II = I + feed supplements 1.00% body weight of beef cattle
III = I + feed supplements 1.50% body weight of beef cattle
IV = I + feed supplements 2.00% body weight of beef cattle.

The total number of calves is used to measure the growth of 5 beef cattle, in each treatment. Early weight depends on the condition and availability of feed. Early weight is estimated about 200 to 250 kg/head. Many 5 heads, of each treatment. Supplemented feed concentrate has given to improve productivity and growth rate. Four parameters were measured: daily weight gain, increased of feed consumption, feed conversion, and input-output on beef cattle business. The similarity of economic efficiency is measured based on the body weight and the price of cattle/kg. The measurement of prices used an estimation of profit function.

Data analysis

Technically, economic analysis of beef cattle business needed to be done, for measuring the level of business effort and the ability of resources and capital so that the business can run properly. The maximum profit can be achieved at the time when the marginal production values are equal with the marginal costs (Winarso, 2004). Ability to produces output at a certain level of quality with lower costs and utilize local feed. Economy efficiency is a combination of techniques efficiency and price efficiency. The efficiency of the production cost can be compared to the income in a year to calculated the benefit and cost in the future (Siregar, 2012) and (Ashari *et al.,* 2013).

The calculated number of farmer, it's converted to an equivalent of man days (hari orang kerja /HOK), where the man days equal to 5 hours of work in a day, with salary IDR15.000,-/day (Rusdiana *et al*., 2010). This calculation can be calculated as labor balance, yet through the time, the farmers never considered. Total cost is all expenditures that used to pay. Farmers can be said as an indicator and the determinant for the success of both breeding and fattening business. For the analysis, the total cost is classified into fixed costs and the variable cost (Steflyando *et al.,* 2014).

Business activities can be measured when there is a change in cost addition and disadvantage of cattle's dead. CRD used to analyze beef cattle business. If there was significantly different, then continued to Duncan test. The efficiency of beef cattle business can be analyzed in financial economics (Steel and Torrie, 1995). The income and cost were found by the acceptance rate of net marginal (marginal rate of return, MRR or incremental benefit-cost ratio, or the MBCR ratio, the addition of net income and variable cost) (Soeharsono *et al*., 2014a). The analysis of the feasibility study on food crops and livestock is using of R/C and B/C ratio (Kusnadi, 2008).

Result and Discussion

An overview of research's area

The number of occupants and farmers in Batui had influenced the economic increase. South Batui has 13.606 people living in with 7.017 of male and 6.589 of the female. Based on the age of groups, children categorized as not yet productive at 0 to 14 years old, is about 27.67%. Productive age is between 15 to 69 years about 69.32%, and nonproductive age is above 70 years old about 3.01% (BPS Kabupaten Banggai Sulawesi Tengah, 2014).

Figure 1 shows that number of dependency burden to the food consumption is about 44.26%, which defined that every 100 productive people has 44 dependents of non-productive people. Furthermore, the climate change can influence the productivity of food crops and feed. Climate change has great potential, mainly in the availability of water resources that shown in potential of evenly rain (BPS Kabupaten Banggai Sulawesi Tengah, 2014). High rainfall lead to the growth of either superior or inferior grass as cattle feed. Forage is abundantly available for feeding the beef cattle.

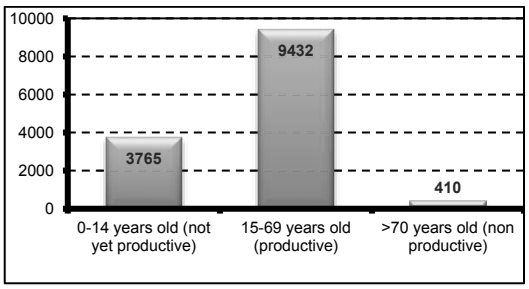

Figure 1. Total population of Banggai regency, Central Sulawesi, 2015.

The population of the beef cattle.

The population of beef cattle in Central Sulawesi is about 249,990 heads in 2015 (BPS Kabupaten Banggai Sulawesi Tengah, 2014) and within five years, this condition will continue to rise. Beef cattle business has been developed slowly for a long time in this area, due to limited capital factor. The characteristic of business is 94.73% mostly small beef cattle farming system; each farmer has 2 to 5 heads of cattle that owned by themselves. The farmers have a number of cattle with different ages. The purpose of the beef cattle business in Banggai was for breeding and fattening. The increase of beef cattle population with a linear pattern of Y = 197738 + 11806x, with R^2= 0.84 can be seen in Figure 2.

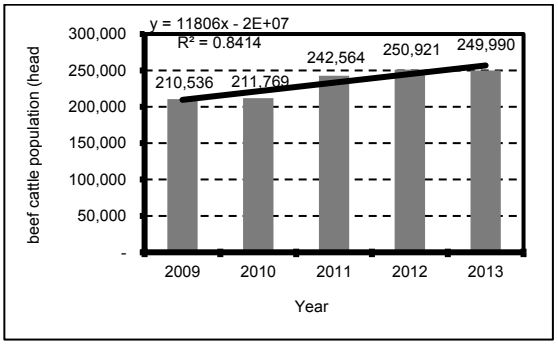

Figure 1. Population of beef cattle in 2009-2013.

Table 1. Population of beef cattle in the Central Sulawesi Province 2015

District/City	Beef cattle population	
	Head	Percentage (%)
Regency Banggai	15.979	6.39
Banggali	54.642	21.86
Morowali	21.023	8.41
Poso	14.109	5.64
Donggala	35.083	14.03
Tolitoli	13.320	5.33
Buol	13.957	5.58
Parigi Ranga Reddy	26.183	10.47
Tojo Una-Una	20.969	8.39
SIGI	26.540	10.62
Banggai Sea[1)]	-	0.00
Morowali North	-	0.00
Hammer	8.185	3.27
Total	249.990	100.00

Source: BPS Kabupaten Banggai Sulawesi Tengah, 2014

There were 4 regencies as the development center of beef cattle in Central Sulawesi: Banggali regency 21.86%, Donggala regency 14.03%, Sigi regency 10.62%, and Parigi Moutong 10.47% toward population increase. The structure of beef cattle population in Banggai Regency, Central Sulawesi is shown in Table 1. Banggali regency as the largest development center of beef cattle (about 21.86%) in Central Sulawesi, indicated the increase of population growth during last five years 2009 to 2013 with linear pattern Y=36539 + 4570x with R^2 =0,93 at Figure 3.

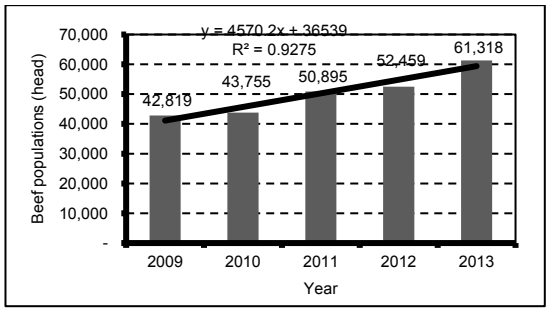

Figure 3. Population growth of beef cattle in Banggai District, Central Sulawesi 2009 – 2013.

Description of beef cattle business

Description of beef cattle business shows that profit can be earned by selling beef cattle in one year. Either direct cost or contingency amount can be financially analyzed at the end of the year. The development of beef cattle in Banggali regency is carried in the agricultural center, irrigated farmland, and dry land, as the center of the secondary crop, also the other of livestock business. The availability of agricultural land indicates a high population of beef cattle. Thus the farmers have prospects on their economic activity. Population and density of livestock in each sub-districts in Banggali can be seen in Table 2.

Banggali regency, Central Sulawesi is a granary with the area of rice crops about 170,54 ha. This area has the greatest potential to develop both of beef cattle and food crop business. Livestock density per hectare of the harvested area can be balanced with the land circumstance and the number of cattle that are raised by each farmer. Livestock density per land area is possible for the development of beef cattle due to the abundant of feed availability. With the support of farmer resources, environment, water, climate factor, and sufficient land crop to provide feed, Banggali regency can be developed into a greater beef cattle business, and the farmers were organized. Thus the business scale would be increased.

Business development strategy of beef cattle in Banggai Regency, can be directed to the improvement of farmers capacity through education, training, and continuous guided, prepared from the procurement of tools production to selling products. The management of beef cattle business is based on concentrate feed technology for breeding and fattening which environmentally friendly. The local feed is cheap so that the productivity of beef cattle can be further effective and efficient. According to the Rusdiana and Bamualim (2009), it is necessary to empower the farmers who are able to manage the business together with their members, so that the beef cattle business running effortlessly.

To enhance the business of beef cattle either fattening or breeding, it requires the reinforcement of network cooperation in each farmer organization (Rusdiana and Adawiyah 2013a) in order to access easier and cheaper tools production (seeds, calf, feed, and medicines).

The number of sold beef cattle

Price trends of beef cattle are highly enough; this means that the business is quite strong and the farmers have the opportunity to improve their business scale. The farmers were selling their cattle to meet the household needs. The research showed that buying and selling activities were mainly occurred in pen, in the house and livestock market among the farmer and

Table 2. Area and population density of beef cattle in Banggai District

Sub-district	Area			Beef cattle population		Density of livestock	
	Administration (km^2)	Harvest broad ha	%	head	%	Head/km^2	Head/ha
Toili	761.31	39.38	23.09	6.739	10.99	8.85	0.17
Toili Barat	993.67	31.79	18.64	7.275	11.86	7.32	0.23
Moilong	221.64	20.24	11.87	4.340	7.08	19.58	0.21
Batui	1.062.36	8.45	4.96	2.504	4.08	2.36	0.30
Batui Selatan	327.97	21.48	12.59	2.071	3.38	6.31	0.10
Bunta	579.00	750.00	0.44	3.928	6.41	6.78	5.24
Nuhon	1.107.00	3.97	2.32	6.712	10.95	6.06	1.69
Simpang Raya	243.69	5.54	3.25	2.731	4.45	11.21	0.49
Kintom	428.72	-	-	2.051	3.34	4.78	
Luwuk	72.82	-	-	267	0.44	3.67	
Luwuk Timur	216.30	4.47	2.62	1.130	1.84	5.22	0.25
Luwuk Utara	246.08	-	-	880	1.44	3.58	
Luwuk Selatan	119.80	-	-	208	0.34	1.74	
Nambo	169.70	-	-	536	0.87	3.16	
Pagimana	957.34	426.00	0.25	2.411	3.93	2.52	5.66
Bualemo	862.00	5.86	3.44	9.149	14.92	10.61	1.56
Lobu	138.44	-	-	545	0.89	3.94	
Lamala	220.66	2.92	1.72	340	0.55	1.54	0.12
Masama	231.64	25.26	14.81	1.656	2.70	7.15	0.07
Mantoh	226.00	-	-	916	1.49	4.05	
Balantak	196.46	-	-	1.369	2.23	6.97	
Balantak Selatan	146.50	8.00	0.00	1.501	2.45	10.25	187.63
Balantak Utara	143.60	-	-	2.059	3.36	14.34	
Total	9.672.70	170.54	100.00	61.318	100.00	6.34	0.36

Source: BPS Kabupaten Banggai Sulawesi Tengah, 2015.

the local traders. The number of beef cattle sold during 2015 is presented in Table 3.

Table 3 figures that beef cattle selling system in March to April 2015 nearly similar in the type and age of cattle. The highest sales achieved at 92.71% about 18 head/day of Bali beef cattle, it contains 68.75% of bull and 31.25% of a cow. While between 9 to 11 months of age is about 4.86%, between 1 to 2 years of age is about 56.25%, and between 2 to 3 years of age is 38.89%. The number of beef cattle that sold is about 288 heads in 16 times selling of one year.

The efficiency of beef cattle business

The beef cattle business is mainly done by the farmers with a low level of ownership. Economic analysis on beef cattle businesses can be measured by the level of business efficiency, so that obtained value of profit farmers in each expenditure (Andriati and Sudana, 2007). It can be assumed that the farmers in beef cattle breeding in Central Sulawesi, need to pay the labor for maintenance for IDR15,000/day. To generate a calf, it costs IDR3,600,000/head while the price of a weaning cow is IDR5,000,000/head. From this condition, beef cattle breeding business is considered unprofitable for the farmers. Beef cattle in fattening business treated with supplemented concentrate feed for 4 months shows increase of weight gain, feed consumption, feed conversion, and feed cost per gain (FCG) can be seen in Table 4.

Table 4 shows that different level of supplemented feed composed of rice bran and dried coconut meal affected ($P<0.05$) significantly to the weight gain of cattle. Feed conversion on average daily gain in control treatment was 0.26 kg/day, treatment I was 0.51 kg/day, treatment III was 0.66 kg/day and treatment IV was 0.75 kg/day. Total feed consumption indicates that giving feed concentrate affects ($P<0.05$) toward an average daily gain of cattle. Feed conversion of treatment IV which given 2.00% of concentrate feed was about 9.25, lower than control treatment control about 17.47.

Feeding with corn straw in beef cattle business can afford daily gain about 0.5 kg/day (Soeharsono *et al*., 2014b). Feed consumption on each treatment increases the consumption of as fed. The greater consumption of as-fed will increase the consumption of supplemented feed concentrates. The lowest value of feed conversion was about 9.25, and FCG was IDR11,303 on giving 2.00% of supplemented feed (treatment IV). However, there were no significant differences on treatment III ($P>0.05$). The study implies that feeding with feed concentrate is the good way to improve the daily gain of beef cattle.

Table 3. Number and type of cattle sold in farms

Description	Total (head)	Gender		Age			Cattle breeds		
		Male	Female	< 1	1-2	> 2	Putih	Bali	Rambon
Total	288	198	90	14	162	112	9	267	12
Average	18.00	12.38	6.43	2.00	10.80	7.47	1.29	16.69	1.50
SD	8.11	6.46	4.07	0.82	6.13	4.90	0.49	7.39	0.53
Percent	100.00	68.75	31.25	4.86	56.25	38.89	3.13	92.71	4.17

Table 4. Additional body weight (UN) beef cattle in farmers

Component	Treatment			
	I=Control	II=1.00% BB	III=1.50%BB	IV=2.00%BB
Daily gain (kg)	43.20±4.38^{a}	61.20±8.57^{b}	79.20±4.95^{bc}	90.00±9.42^{c}
Average daily gain (kg/day)	0.36±0.05^{a}	0.51±0.08^{b}	0.66±0.05^{bc}	0.75±0.12^{c}
Feed consumption	6.29±0.72^{a}	6.72±3.84^{a}	6.86±2.36^{ab}	6.94±2.46^{b}
Feed conversion	17.47±3.54^{c}	13.81±3.52^{b}	10.39±2.72^{a}	9.25±2.96^{a}
FCG (IDR)	12.74±2.58^{b}	13.22±2.57^{b}	11.69±3.96^{a}	11.10±3.85^{a}

Different letter superscript on the same line shows a significant difference (DMRT 5%).

Financial analysis of beef cattle

Financial analysis refers to compare between cost and revenue to determine whether a beef cattle business will give some benefits during the time. There are two types of the beef cattle business in Batui sub-district, Banggai regency, breeding, and fattening, also breeding and fattening fusion. Breeding on beef cattle business technically takes 1 to 3 years time to generate calves, while fattening requires only 4 to 6 months. The greater number of cattle owned by a farmer will lead to the increased of cattle that can be sold per year, thus it advance the farmer's income (Murwanto, 2008).

The results of input-output calculations on fattening beef cattle business showed that supplemented feed concentrate from dried coconut meal would make feed cost and a total of cattle kept by the farmers become higher. In the breeding system, feed concentrate reaches IDR1,600/kg, while king grass and rice straw IDR200/kg. Total feed cost in control treatment IDR6,291/head, treatment II IDR6,421/head and treatment III IDR9,195/head. Feed cost takes effect on the successful of beef cattle business, it can be observed at the total income in the end. Total costs on beef cattle business is used to make all expended cost become efficient both cost production and labor cost.

Analysis of fattening beef cattle business presented on Table 5 shows that the highest total cost and cost production on the implementation of supplemented feed concentrates achieved at 2.00% level of supplementation.

Total income in the beef cattle business can be defined as the result of total revenue minus total cost. Control treatment resulted in IDR4,889/head/period of net profits, 2.36 of standard deviation value, 1.50 of R/C ratio and 0.56 of B/C ratio. In the treatment II can be found that net profit was about IDR10,359/head/period, 3,276 of standard deviation, 2.15 of R/C ratio, and 1.15 of B/C ratio. Treatment III obtained net income about IDR13,977/head/period, 3,980 of standard deviation value, 2.26 of R/C ratio, and 1.26 of B/C ratio, while the treatment IV had IDR16,805/head/period of income, 1,424 of standard deviation value, 2,44 of R/C ratio and 1,44 of B/C ratio. These results are lower than Soeharsono *et al*. (2014b) found that the value of R/C ratio in beef cattle business is 1,95.

In the other hand, Rusdiana *et al*. (2010) suggested that beef cattle business with about 3 heads of cattle ownership had 1,54 of R/C ratio. The results of MBCR (*the Margin of benefit-cost ratio)* analysis show that 2.00% of supplemented feed concentrate applied to beef cattle in a row are 2,12 of control treatment, 3,78 of treatment II, 3,93 of treatment III and 4,10 of treatment IV from each additional input of beef cattle business. The results are nearly in line with Siregar (2012), and Steflyando *et al*. (2014) studied that the value of the benefit-cost ratio (MBCR) was about 2,03. The regional minimum salary (UMR) is about

Table 5. Analysis of fattening on beef cattle business

Component	Treatment			
	I=Control	II=1.00% of weight	III=1.50%of weight	VI=2.00%of weight
Feed cost	6.29±819^{a}	6.52±856^{a}	8.60±1.853^{b}	9.19±1.88^{b}
Total cos	8.79±819^{a}	9.02±856^{a}	11.10±1.853^{b}	11.69±1.88^{b}
Income	13.69±2.09^{a}	19.39±3.01^{b}	25.08±4.69^{c}	28.50±1.49^{d}
Revenue on feed cost	7.39±2.36^{a}	12.85±3.28^{b}	16.48±3.99^{c}	18.30±1.42^{d}
Profit	4.89±2.36^{a}	10.35±3.28^{b}	13.98±3.99^{c}	16.80±1.42^{d}
R/C	1.56±1,30^{a}	2.15±0.42^{b}	2,26±0.39^{bc}	2,44±0.24^{c}
B/C	0.56±0,30^{a}	1.15±0.42^{b}	1,26±0.39^{bc}	1,44±0.24^{c}
Employee benefit	39.12±20.88^{a}	82.88±24.20^{b}	111.81±22.39^{c}	134.44±26.84^{d}
Margin benefit cost ratio (MBCR)	2.12	3.78	3.93	4.10

Different letter superscript on the same line shows a significant difference (DMRT 5%).

IDR1,500,000/month or IDR50,000/day showed that labor's salary (opportunity cost) is suitable to the UMR standard. Based on the analysis of business efficiency level, it can be determined that beef cattle business in Batui sub-district, Banggai regency, Central Sulawesi, deserves to be developed.

Conclusion

This study found that beef cattle business has a greater potential to be developed in Batui sub-district, Banggai regency, Central Sulawesi. In addition, support of agricultural land and the local government were required to improve the development of beef cattle farm. Total income and production cost on the implementation of supplemented feed concentrate achieved the highest result on 2.00% level supplementation. Profit from control variable was IDR13,680/head, 1,50 of R/C ratio and 0,56 of B/C ratio. Treatment II was IDR19.380/head with 2,15 of R/C ratio and 1,15 of B/C. Treatment III was IDR25,080/head with 2,26 of R/C ratio, and 1,26 of B/C ratio and treatment IV was IDR28,500/head with 2,44 of R/C ratio and 1,44 of B/C. Financially, beef cattle business is profitable, and feasible to be developed in Banggai Regency, Central Sulawesi.

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