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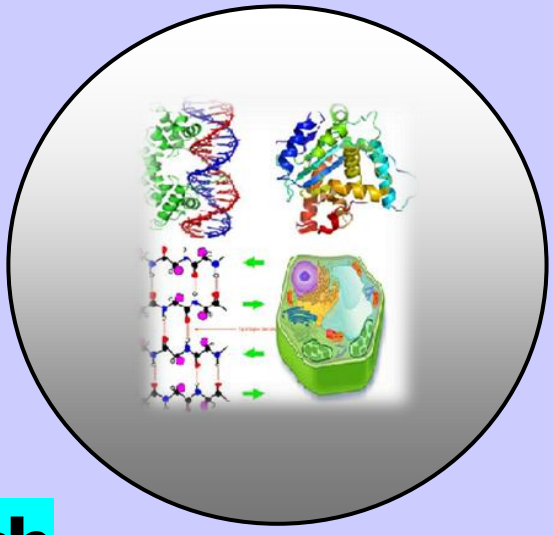

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RESEARCH PAPER

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Financial Feasibility of Bali Cattle Breeding Using Various of Funding Resources at Bali Province

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ABSTRACT

This survey was carried out on the village breeding centre were supervised by Bali Cattle Breeding Centre at 5 regencies in Bali. This survey using 90 respondents were selected by stratified random sampling. This study aimed to analysis the several of funding resources from Social Aids, Credit for Cattle Breeding Farm, and Commercial Credit, to financial feasibility of Bali cattle breeding. Financialfeasibilitywasdetermined by assessing the eligibilitycriteriaof investment. Thisassessmentsconducted by 2 system calculations,based on cash costs, and total cost.Based on cash costs, Bali cattle breeding that uses all three funding resources, is financiallyfeasible. It can be seen from the NPV:Rp. 572.141.000,-; Rp. 524.048.000,-; and Rp. 499.306.000,-. IRR 43, 95%, 40,31%, dan 37, 20%, and Net B/C ratio : 3,45; 3,24; dan 3,13. Investments havebeenable to be returnedwithin a period of 2,48years.However, based on the total cost, balicattlebreedingthat uses all three funding resources, is notfinanciallyfeasible. This is indicated by a negative NPV of Rp-188.693.000,-; Rp-223.919.000,-; Rp-261.529.000,- and Net B/C ratio: 0,46; 0,40; 0,35.

***Keywords**: Bali Cattle, Financialfeasibility, Funding Resources and Famers Income.*

INTRODUCTION

Bali cattle have an important role in achieving national self-sufficiency in beef. Bali cattle produced in Bali Province has more value than the Bali cattle produced by other regions, because of Bali Province is the only area that is believed to have a pure genetic Bali cattle. With these advantages, the Province of Bali has a great opportunity to develop Bali cattle breeding in Bali. But in fact, the growths of business in Bali cattle breeding are still low, so it needs to be stimulated in order to grow faster. The government has issued various policies aimed at increasing public interest in beef cattle breeding, which are: the provision of Social Aids to the selected groups, incentives to farmers who have pregnant cows at least 5

months, strengthening the source region of seed and institutional venture breeding, development cattle breeding efforts through Village Breeding Centre (VBC), the provision of interest /*KUPS* (credit for cattle breeding farm), and setting the distribution and marketing of beef cattle (Direktorat Jenderal Peternakan, 2010). However, the policy programs have not been able to stimulate the growth of Bali cattle breeding business in Bali. Bali cattle breeding businesses in Bali still cultivated in the small scale, average 1-3 cows per farmer. The farmers are not interested to develop their business scale due to constraints on the highly capital requirements. Almost all of the farmers are using personal funds (family funds) as a source of business capital. The small scale of Bali cattle breeding business that is cultivated with intensive/semi-intensive is not profitable.

Under these conditions, it is necessary to do research on the analysis of the source of financing for the financial feasibility of Bali cattle business in the province of Bali. By doing this research, can provide information to farmers in utilizing financing sources that exist, to improve farm business scale. Increased profits are expected to stimulate public interest in starting a new venture in the field of breeding Bali cattle, and can be more attractive for farmers and investors in the development of cattle breeding so that the availability of Bali cattle calf market can be guaranteed in terms of both quality and quantity.

RESEARCH METHODOLOGY

Location, Time, Respondent and Data

This study conducted in Village Breeding Centre (VBC) undersupervisionof Bali CattleBreeding Center (*BPTU*) using a survei methode. ThisresearchconductedfromJanuary – May 2014. Research sample population used in this study are fifty group of bali cattlebreedingfarmer in fiveregenciesof Bali were supervisedby BPTU atleastsince 2 years.

The research location is determined by purposive sampling method. Respondents who would be the source of information in this study were determined by stratified random sampling method.

There are three scenarios were used in this research

1st Scenario	Bali cattle breeding business with funding sourced from Social aids. Social Aids is a grant from government to group of farmers. Based on *Regulation Minister of Agriculture No: 129/Permentan/OT.140/1/2013* on Guidelines for the Management of Social Aids Ministry of Agriculture 2014
2ndScenario	Bali cattle breeding business with funding sourced from KUPS. KUPS are a loans granted by the bank (commercial banks designated by the government) to cattle breeding farm that earn interest subsidy. The interest rate charged by 5% per year declined, and the credit period maximum of six years, with a grace period maximum of twenty four months (Direktorat Jenderal Peternakandan Kesehatan Hewan*, 2012*).
3rd Scenario	Bali cattle breeding business with funding sourced from credit commercial. Credit commercial offered by banks / cooperative with an interest rate charge by 12% per year settled, a credit period up to 3 years, profisi fee are 1% of total loans, an administration fee are 0.5% of total loans.

The respondent were stratified into three stratas namely: group leader and secretaries (strata 1), other officials (strata 2), and members (strata 3). Samples were taken at random from each stratum. Under these provision, there is 90 respondent are chosen. A survey using mixed qualitative and quantitative methods was carried out in these study was use in collecting data in economic analysis of Bali cattle breeding business in Bali.

Investment Criteria Analysis

Assessment of financial feasibility is based on two calculation system (Soekartawi, 2002), namely (1) based on the calculation of cash costs (cost calculations based only on real spending (existing condition) where the cost of green feed and labour are not counted as costs, and (2) based on the calculation of the total cost (in which both components of costs that were taken into account as cost). Financial feasibility calculated using the discount rate of 12%, with the project period are 12 years. According Soekartawi, 2002 the calculation of physical input needed in Bali cattle breeding business, namely: food, medicine, labour, and other costs made with reference to the system of livestock unit (*ST*). Labour used to maintain the cattle calculated by reference to the system Men's working day unit (*HKSP*).

Financial feasibility of Bali cattle breeding business is determined by assessing the eligibility criteria for investment such as: NPV, Net B / C, IRR, and payback period. The formula used for calculating the amount of those criteria is based on Kadariah (1999), Ibrahim (2003), and Gray, et al. (2005), as follows:

1. *Net Present Value* (*NPV*)

$$NPV = \sum_{t=0}^{n} \frac{B_t - C_t}{(1+i)^t}$$

Where:

B_t = *Benefit* in year t (Rp)
C_t = Costincurred in year t (Rp)
i = *Discount Rate* (%)
t = Total time (year)

2. *Internal Rate Return* (*IRR*)

$$IRR = i_1 + \frac{NPV_1}{NPV_1 - NPV_2} \cdot (i_1 - i_2)$$

Where:

i_1 = *Discount rate* that result *NPV* 1
i_2 = D*iscount rate* that result *NPV* 2
NPV_1 = *NPV* Positive (Rp)
NPV_2 = *NPV* Negative (Rp)

3. *Net Benefit and Cost Ratio* (*Net B/C Ratio*)

$$\textit{Net B/C ratio} = \frac{\sum_{t=0}^{n} \frac{B_t - C_t}{(1+i)^t}}{\sum_{t=0}^{n} \frac{B_t - C_t}{(1+i)^t}} untuk \frac{(B_t - C_t) > 0}{(B_t - C_t) < 0}$$

Where :

Bt = *Benefit* in year t
Ct = Costincurred in yeart
i = *Discount Rate* (%)
t = Economicperiod (year)

4. *Pay Back Period* (*PBP*)

$$PBP = T_{p-1} + \frac{\sum_{i=1}^{n} \bar{I}_i - \sum_{i=1}^{n} \bar{B}_{icp-1}}{\bar{B}_p}$$

Where:

T_{p-1} = Year before *PBP*

$\bar{I}_i$ = Amount of investment that has been discounted

$\bar{B}_{icp-1}$ = Amount of *benefit* that has been discounted before PBP

$\bar{B}_p$ = *benefit* that has been discounted in *PBP*

5. *Break Even Point* (*BEP*)

$$BEP = T_{p-1} + \frac{\sum_{i=1}^{n} \overline{TC}_i - \sum_{i=1}^{n} \bar{B}_{icp-1}}{\bar{B}_p}$$

Where:

T_{p-1} = Year before *BEP*

$\overline{TC}_i$ = Amount of total cost has been discounted

$\bar{B}_{icp-1}$ = Amount of benefit has been discounted before BEP

$\bar{B}_p$ = Amount of benefit in BEP

6. *Profitability Ratio* (PR)

$$PR = \frac{\sum_{i=1}^{n} \bar{B}_i - \sum_{i=1}^{n} \overline{OM}_1}{\sum_{i=1}^{n} \bar{I}_i}$$

Where:

$\bar{B}_i$ = Amount of benefit has been discounted

$\overline{OM}_1$ = Amount of operational cost has been discounted

$\bar{I}_i$ = Amount of investment has been discount

7. Sensitivitytest

Sensitivity test aims to determine the condition of the financial feasibility of Bali cattle breeding farm in Bali whenthereis a change onthepricesof production outputand input, the number businessscale, and changes in interest rates on financing sources. The ccalculation of sensitivity analysis using Switching Value methods.

RESULT AND DISCUSSION

Benefit Flow (In flow)

The results of this study showed that the benefit obtained from Bali cattle breeding business are: calf, culled cow, manure, and the residual value. Benefit in the first year and the second year obtained only from manure sales, because the sales of calf occurred in the fourth month of the third year. Calves are sold at an average age of 7.37 months, at Rp 3.479 million/head for female and Rp 4.459 million .- / head for male. The cows culled at 8.73 times parity, and then they are sold at Rp 6.125 million,-/head. Manure selling price are Rp600,-/ kg. The residual value is obtained from the residual value of the building stables and other buildings accounted for 10% of the initial value.

Cost Flow (Outflow)

1. Investment costs

The investment costs are costs incurred to finance the physical input that can be used for several period of production. The cost of investment in Bali cattle breeding businesses are: 1) purchasing cows; 2) making the stables and other buildings; 3) equipment; 4) land lease; 5) electrical installation; and 6) water installation. For the investment goods that have economic period less than 12 years, it has to reinvestment accordance to its economic period.

2. Operational costs

The operational costs can be divided into fixed costs and variable costs. Fixed cost component consists of the cost of depreciation of buildings and equipment, as well as the cost of electricity and water load. The variable cost consists of the cost of feed (fresh forage and concentrate), minerals, labour, artificial insemination (AI), vitamins and medicines, vaccines, and materials to make manure. Labour costs and the cost of fresh forage is the cost that counts, because the real farmers does not pay the labour and also does not buy fresh forage. Labour costs accounted for Rp 45,000 / HKSP according to farmer salary. While the cost of forage accounted for Rp 199.77 which is calculated from the length of time and other costs required to seek fresh forage.

Financial Feasibility

1. Based on cash cost

Based on the results of financial analysis based on cash costs, bali cattle breeding business that used all three scenarios are feasible to developed (Table 1.)

Table 1. Financial Feasibility Analysis Based on Cash Cost.

Funding Sourced	NPV (Rp)	IRR (%)	Net B/C Ratio	PBP (year)	BEP (year)	PR
1st Scenario	572.141.000	43,95	3,45	2,48	3,38	3,09
2nd Scenario	524.048.000	40,31	3,24	2,48	3,67	2,89
3rd Scenario	499.306.000	37,2	3,13	2,48	3,96	2,80

The result of analysis sensitivity of Bali cattle breeding business that used all three scenarios based on cash costs, shows the switching value of business scale are 4,41; 5,39; dan 5,97 heads.

2. Based on total cost

The result of financial feasibility analysis of the Bali cattle breeding business with various financing scenarios and calculated based on total costs, indicating that the Bali cattle breeding business is not feasible. The value of NPV are negative, Net B/C are less than one, and PR also less than one for all of scenarios (Table 2).

Table 2. Financial Feasibility Analysis Based on Total Cost.

Funding Sourced	NPV Rp)	Net B/C Ratio	PBP (years)	PR (years)
1st Scenario	(188.693.000)	0,46	2,48	0,06
2nd Scenario	(223.919.000)	0,40	2,48	-0,08
3rd Scenario	(261.529.000)	0,35	2,48	-0,23

The result of financial feasibility analysis of Bali cattle breeding business based on total cost are not feasible if there is feed and labour cost are charged. The fresh forage prices in this study is Rp 199,77,-/Kg. This prices is higher than the selling price of fresh forage at Rp100,-/Kg. This business will be feasible if the selling price of 7.37 months calf over than Rp5.976.996,20/head (1st scenario),Rp 6.350.407,15/head (2nd scenario), and Rp 6.749.093,20/head (3rd scenario), while the other condition are fixed. The financial feasibility are feasible, if the fresh forage prices less than Rp 98,02/kg (1st scenario), Rp 79,03/kg (2nd scenario), and Rp 58,75/kg (3rd scenario), while the other condition are fixed.

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