

## **Financial Analysis of Medium Scale Pig Farming Livestock in The Gianyar District**

**Ida Ayu Parwati<sup>1</sup> and Nyoman Suyasa<sup>1</sup>**

<sup>1</sup>Bali Assesment Institute of Agriculture Technology (BPTP)  
Jl . By Pass Ngurah Rai - Pesanggaran , PO BOX 3480th , Denpasar  
Coressponding email : dayuparwati@yahoo.com

### **ABSTRACT**

This study aims to analyze how much the production costs and profits as well as the break-even point a pig farm in Payangan District, Gianyar. Survey method with case study approach. The middle-class of pig farms have an average of 166 pigs consisting of 3 males, 30 breeding, 20 head finisher phases, and 33 grower phases and 80 starter phases (piglets). The results showed the composition of costs during the production process per period, which amounted to 49.53% of feed costs, 11.60% labor costs, and 31.03% breeding costs, depreciation cage / equipment 1,01%, electricity / water 0.86% , transport 5.25% and tax on businesses by 0.72% of the total cost of production. The average cost of production of a pig farm in Payangan District Rp. 2.094.461 / head / production period consisting a fixed cost of Rp. 113.9 million and variable costs of Rp. 233.780.500 / production period. The use of capital (cost of production) has been efficient which could be seen from the ROI of 2.72. A pig farm in Payangan District is likely more profitable illustrated with the average profit earned Rp. 770.660 per head per production period and average profit per month is Rp. 10,660,792. Pig farmers in the district of Payangan, Gianyar has already producing above the breakeven point at 78.18 the production volume or 78 head unit with the acceptance rate of Rp. 475.610.000 per period of production.

**Keywords:** Ranch pork, benefits, costs, BEP.

### **INTRODUCTION**

Capital limitation owned by farmers resulted them in limiting the number of maintained livestock and the use of input factors so that it will impact on relatively small profit levels. According to Sihombing (2010), the largest production cost in pig business is food cost which reaches 65-80 percent of total production cost. While in fact lately since the monetary crisis hit the economy, the price of animal feed ingredients has increased. An increase in production costs without being followed by profit is a problem for farmers because production costs are the decisive factor in the livestock business. Changes in production factor prices will certainly impact on changes in profits received. In every livestock business is always expecting profits because the success of many livestock business depends on the profits obtained by farmers. There are several benefits to be gained in raising pigs, besides being a source of protein can also contribute greatly to the increase in family income of farmers.

Efforts to increase profits require calculating the use of production factor costs in pigs. Especially the medium-scale of pig farm business in Gianyar Regency has been cultivated long enough so that it needs an analysis study of the use of production costs as input factors in relation to the profit gain. The problem is whether the use of production costs in a pig farm business has been efficient so as to provide significant benefits and whether the pig farm business that has been done so far has reached a breakeven point. This study aims to analyze how much the production cost and profit as well as the break-even point of pig farming business on medium-class public farm in Gianyar Regency.

## MATERIALS AND RESEARCH METHODS

This research was conducted on pig farm business in Gianyar Regency the accompaniment location with livestock ownership > 100 heads. This study used a survey method with case study approach (Arikunto, 2002; Daniel, 2001; Singarimbun and Effendi, 2009). Case study is a study conducted on a subject in exploring an activity to obtain facts and data. The type of data collected in this study consists of secondary data and primary data. Secondary data is obtained from the institutions, such as the Breeders and Marine Office Gianyar Regency, urban village office or parties that have something to do with this research (such as poultry shop). Primary data obtained through direct interviews on respondents who are the owners of pig farms in Payangan District, Gianyar Regency. Primary data include; Characteristics of livestock business, pig population, production, price, fixed cost, variable cost during one production period or in one year. Definition of variables and measurements are (1) Fixed costs is the overall fixed costs that are sacrificed for pig farm business, among others; The cost of pigs livestock germs, depreciation of pens / equipment and business taxes expressed in rupiah units per production period; (2) Variable cost is the overall operational cost, among others; The cost of food, labor, drugs / vaccines and vitamins, transportation, electricity and water bills that are sacrificed, expressed in units of rupiah per production period; (3) Revenue is the sale of pigs multiplied by price, expressed in units of rupiah per period; (4) Profit is the amount of money earned as the difference between receipts and operational costs (variable costs), expressed in units of rupiah per production period. The data collected in the tabulation and analyzed by using descriptive and mathematical analysis approach is production cost and profit analysis and breakeven analysis. Descriptive analysis approach intends to describe qualitatively the real state of pig farms in the research sites formulated in tablearis or percentage form. Profitability analysis using profit analysis model (Beattie and Taylor, 1994; Derbertin, 1986). Comparison between the recipients and production costs sacrificed during the production process, analyzed through the Return of Investment (ROI) approach is:

$$ROI = \frac{\text{Operating profit}}{\text{Total of production cost}}$$

If the value of ROI > 1, means the business is profitable. The greater the value of ROI will be the greater the level of profits derived from the business and can be categorized more efficient the use of capital from a business. Break even analysis using analysis approach according to Ibrahim (2003) that, breakeven point analysis (BEP) is total revenue (TR) equal to total cost (TC). Break even analysis is calculated based on volume, production (unit) and revenue (rupiah) with model approach BEP Unit and BEP Rupiah as follows:

$$BEP (Unit) = \frac{TFC}{VC - HY}$$

$$BEP (Rupiah) = \frac{TFC}{VC} \cdot \frac{1}{HY}$$

The company that is still in a loss-free situation in the business operation, analyzed by Margin Of Safety (MOS) approach that is the decrease of safe production percentage or the decrease of production of a business. The MOS analysis model is the value of the budgeted sales (the value of production receipts) minus the breakeven value compared to the budgeted sales value

(the value of production acceptance) expressed in a percentage. In general MOS is expressed in ratio (percentage), that is :

$$MOS = \frac{\text{Acceptance} - \text{Break even point}}{\text{Acceptance}} \times 100$$

## RESULTS AND DISCUSSION

Production cost in pig farm business in Payangan Sub-district of Gianyar Regency covers fixed cost and variable cost. According to Soekartawi (2001), the expenses that are intended for the financing of fixed production factors such as the purchase of seeds, depreciation and production of equipment and taxes on business, while the variable cost is the cost that is intended for the financing of the production factors that are variable in one Production processes such as labor and production costs. The fixed costs of pig farming in Payangan Sub-District, Gianyar Regency include; Depreciation of tools and equipment of cages (shovels, buckets, brooms, food and drink, rope, etc.), seed costs and taxes on business. Fixed costs include; Labor costs, feed and vitamin costs as well as medicines, transportation, electricity and water bills. The composition cost of pig farms in Payangan District, Gianyar Regency can be seen on the illustration Table 3. The data in Table 3 shows that the fixed cost of Rp. 113.9 million or 32.76% of the total production costs, while the variable cost of Rp. 233,780,500 or 67.24% of the total production cost. Based on the research result, each composition cost during production process per period especially feed cost equal to 49,53%, labor cost equal to 11,60%, cost of seed 31,03%, depreciation cost of tool and equipment of cage 1,01%, electricity & water 0.86%, transportation 5.25% and taxes on business of 0.72% of total production costs. The feed cost absorbs only 49.53% of the total production cost, this is not in accordance with previous studies which show feed costs ranging from 60-80%. The low cost of feed is due to the semi-intensive maintenance. Aritonang (2010) states that feed cost has the largest percentage of total production cost that is 60-80%. The research result of Hardyastuti (2011) showed that the cost of feed for pig ranges from 70-80% of the total production cost. Santa (2012) who conducted research in Minahasa District showed that feed cost exceeds 80% of total production cost. Average labor cost of Rp. 242,891 / head and feed cost Rp. 1,031,389 / ekor, while the average fixed cost Rp. 686.145 / head and average variable cost Rp. 1.408.316 / heads. Average cost per head in pig farming business in Gianyar Regency is Rp. 2,094,461 per production period per year. The selling price of pigs by farmers either to the traders or to the consumers. At last it is calculated based on kilogram of live weight for slaughtered pigs. Starter phase pigs are sold per head at the prevailing market price.

The number of pigs sold, the weight of life and the acceptance of pig sales in pig farms in Payangan Sub-district, Gianyar Regency can be seen in the illustration Table 1. Average selling price is the price imposed by the farmers and adjusted to the prevailing price in the market of Gianyar District. The result shows that the price is applied equally to the collecting traders, retailer and end customers. The sale of starter phase livestock is done because the starter livestock cattle are seeded by the buyers. Buyers are pig farmers outside the District or even outside Gianyar Regency.

The sale of pig starter is also better because it avoids the operational costs such as feed costs that tend to fluctuate due to the price of feed ingredients that are often unstable. The amount of profit in the pig farm business in Payangan District, Gianyar regency with one period interval of production per year can be seen in illustration Table 2. The results obtained that the average profit obtained by breeders of Rp.770.660 / ekor / production period. The average

profit per month is Rp. 15,539,943. The amount of profit received by pig farmers on pig farming in Payangan District, Gianyar Regency is very significant. The result of Break Even Point (Unit), Break Even Point (Rupiah) and Margin Of Safety (MOS) and Return Of Investment (ROI) on Pig Farming Business in Payangan District, Gianyar Regency can be seen in Table 4. The result of analysis as in Table 4 shows that the pig farm business in Payangan District has reached breakeven point on the value of production volume 78.18 units or 78 heads with the acceptance of Rp. 472.610.000 / production period. This indicates that the pig farm business in Payangan sub-district has a good profit rate, which means it has exceeded the break-even point.

**Table 1.** Number of Pigs Sold, Average Live Weight of Pigs Per Head and Acceptance

No.	Description	Number (head)	Life Weight (Kg / head)	Amount (Rp)
1.	Fase Stater (@ Rp 650000/ekor)	80	12	52.000.000
2.	Fase Grower( @ Rp 22000/kg Hidup)	33	45	32.670.000
3.	Fase Finisher( @ Rp 24000/Kg Hidup)	20	100	48.000.000
4.	Sow (@ Rp 26000/Kg Hidup)	30	160	332.800.000
5.	Boar (@ Rp 26000/Kg Hidup)	3	130	10.140.000
	Total	166	447	475.610.000

**Table 2.** Average Profit of Pig Farm Business in Gianyar Regency

No.	Description	Amount (Rp)
1.	Capital / Fixed Cost (Variable Fixed Cost)	113.900.000
2.	Variable Cost :	233.780.500
	Total Cost :	347.680.500
3.	Acceptance of Sales of Pigs (Rp)	
	Fase Starter (70 Days)	52.000.000
	Fase Grower (90 Days)	32.670.000
	Fase Finisher (120 Days)	48.000.000
	Induk Betina (>3 Years)	332.800.000
	Pejantan (>4 Years)	10.140.000
	Total Acceptance (Rp) :	475.610.000
4.	Average of receipts Per Month	39.634.167
5.	Average of receipts Per Day	1.321.139
6.	Average of receipts Per Head	2.865.120
7.	Profit Per year (Rp) :	127.929.500
8.	Average profit per month	10.660.792
9.	Average profit per day	355.360
10.	Average profit per head	770.660

**Table 3.** Composition of Fixed Costs and Non-Permanent Costs on Pig Business in Gianyar Regency

No.	Cost Description	Amount (Rp)	Percentage (%)
1.	<i>Fixed Cost</i>		
	- Seeds of livestock	107.900.000	31,03
	- Cage shrinkage and equipment	3.500.000	1,01
	- Business tax	2.500.000	0,72
	<b>Total fixed cost</b>	<b>113.900.000</b>	<b>32,76</b>
2.	<i>Variabel Cost</i>		
	a. Labor	40.320.000	11,60
	b. Feed		
	- Stater period (1 month)	18.000.000	5,18
	- Grower period (2 month)	19.008.000	5,47
	- Finisher Period ( 3 month)	21.600.000	6,21
	- Sow ( 1 year)	99.462.500	28,61
	- Boar ( 1 year)	13.140.000	3,78
	- Vitamins and medicines (1 year)	1.000.000	0,29
	<b>Total (b)</b>	<b>172.210.500</b>	<b>49,53</b>
	c. Transportation (1 tahun)	18.250.000	5,25
	d. Electric + Water (Rp/year)	3.000.000	0,86
	<b>The amount of variable cost</b>	<b>233.780.500</b>	<b>67,24</b>
3.	<b>Total Cost ( Fixed + variable)</b>	<b>347.680.500</b>	<b>100,00</b>
	Average cost Per Head ;		
	Average feed cost Per Head	1.031.389	
	Average total cost Per Head	2.094.461	

**Table 4.** Break Even Point Analysis (BEP) and Margin Of Safety (MOS) and Return Of Investment (ROI) on Pig Farming Business Gianyar Regency

No.	Description	Amount (Rp)
1.	Number of Livestock (Head)	166
2.	Acceptance (Rp/year)	475.610.000
3.	Acceptance (Rp/Head)	2.865.120
4.	Profit (Rp/Year)	127.929.500
5.	Profit (Rp/Head)	770.660
6.	Fixed cost (Rp/Year)	113.900.000
7.	Variabel cost (Rp/Year)	233.780.500
8.	Total Cost (Rp/Year)	347.680.500
9.	Fixed cost Per head	686.145
10.	Variabel cost Per head	1.408.316
11.	BEP (Unit)	78,18
12.	BEP (Rupiah)	223.995.082
13.	MOS (%)	52,90
14.	ROI	2,72

The analysis result of Margin of Safety (MOS) is 52,90%, means that if production level decrease 52,90% hence pig farming business is still in a state of breakeven (no profit and

no loss). It can be explained with ROI value that is, to know the level of efficiency of the capital that has been issued. The value of ROI is 2.72. This means that the use of capital (production costs) on pig farms in Payangan District has been efficient or provide a level of profit. The indication that pig farming in Payangan sub-district, Gianyar regency has a significant profit at the rate of profit per head is Rp.770.660 per production period.

## CONCLUSION

Based on the results of the study can be concluded that:

1. Average production cost of pig farm business at pig farm in Payangan Sub-district, Gianyar Rp. 2,094,461 per head per production period consisting of a fixed cost of Rp. 686,145 and variable costs of Rp. 1,408,316 per head per production period. The use of capital (production cost) of pig farming business in pig farm in Payangan District has been efficiently seen from the value of ROI of 2.72.
2. Pig farming business in pig farms in Payangan sub-district gain a significant advantage seen from the average profit gained of Rp. 770,660 per head per production period and average profit per month of Rp. 10,660,792.
3. Pig farming business on pig farms in Payangan District has reached even has produced above breakeven point on the production volume of 78.18 units or 78 head with the rate of acceptance of Rp. 475.610.000 per production period.

## SUGGESTION

Based on the research result it can be suggested that need to held a thorough review of the socio-economic aspects of pig livestock development in conjunction with the allocation of pig farmers' resources.

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