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INVITED SPEAKERS

FREE PAPER

SENSITIVITY ANALYSIS OF LAYER CHICKEN FARMS IN SUB-DISTRICT KEDUNGPRING LAMONGAN

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ABSTRACT

This research aims to investigate influence of price change of chicken eggs and feed to earnings of farmer. Analysis the used is production cost structure, revenue, advantage and sensitivity. The method used is the method of survey of layer chicken farms undertaken in Sub-district Kedungpring Lamongan. The farmers layer chicken in the Sub-district Kedungpring Lamongan as many as 9 persons, with chickens ownership from 500 up to 9000 head. The result of research show that average of result in one year at production cost equal to Rp 269,079,998 and obtained revenue equal to Rp 348,038,897 and also clean advantage which obtained equal to Rp 78,958,899. The result of analysis of sensitivity show that will experience of loss at condition happened increase of price of feed start 15% and during at the same time happened degradation of egg price start 15%. If further analysis that the change in the decline in egg prices have a higher sensitivity rate than changes in feed price increases and the overall sensitivity level is high when the price changes in both components. In general, layer chicken farms in the Sub-district Kedungpring Lamongan feasible to be developed, because new business will incur a loss if at the same time increase feed rates from 15% and followed by egg prices decreased from 15%. So we need a support from various parties including the government in order to further develop the business centers, especially livestock farming of layer chickens in the area are still not very large population when compared with other areas in East Java.

Keywords: layer chickens, Sub-district Kedungpring Lamongan, sensitivity

CASE DESCRIPTION

The farmers layer chicken in the Sub-district Kedungpring as many as 9 people consisting of 8 men and 1 woman, and spread in the village Gunungrejo, Kalen and Sumberagung. The farmers age varies from age 25 years to 54 years with a major work from civil servants, farmers, village head and pure private farming. The population of layer chickens in the Sub-district Kedungpring at least 500 head and at most 9000 head, with varied experience as a farmer there are also 3 years, 6 years, 7 years and 8 years. The most experienced farmer is Suparto, DVM., He was 8 years as well as a driving force farmers in the region as a provider of livestock facilities from DOC, feed, vaccines, medicines and vitamins as well as farm equipments.

Determining the location of the research done on purpose (purposive sampling) on the basis that the business layer chicken farms in the Sub-district Kedungpring because the record (recording) a relatively complete on farm business and have not been studied previously and has developed a pretty good effort. The method used is survey method. Singarimbun and Effendi (1995) stated that the survey method is a method of research that takes a sample of some populations and the use of questionnaires as the main data collection tool (primary). In addition to the primary data collection is also done through direct observation and in-depth interviews (Sumardjono, 1996). While the secondary data obtained from scientific reports, or literature references relevant to this study.

Based on the observation that the farms in the region Kedungpring tend to develop their business, so it is necessary to test the sensitivity to what extent these efforts will continue to exist under certain conditions. Sensitivity analysis is used to see the changes in feed prices and their products (chicken egg) to the income of farmers. This is done with the consideration that both these factors is the biggest

part of the current farm costs and benefits of layer chickens. To changes in feed prices and their products (eggs) are calculated at 5%, 10% and 15%. Further financial analysis is also performed to price changes is to find out how much the level of sensitivity.

According to the Directorate General of Animal Husbandry (1995) used sensitivity analysis goal is to determine the feasibility of the business due to price fluctuations that may occur in the future. Meanwhile, according to Kadariah *et al* (1999) that the purpose of sensitivity analysis is to see what will happen with the results of analysis of the project if there is an error or a change in the basic calculation of the cost or benefit. Further Kadariah *et al* (1999) argues that in every likelihood that the sensitivity analysis should be attempted, which means that every time that to held back analysis. So it is essential, because the analysis of the project is based on projections that contain a lot of uncertainty about what will happen in the future. To note in this analysis is the presence of cost overun (eg construction price increases), the change in the ratio of price to the general price level (eg reduction in the price of production) and the decline of the implementation.

Feasibility of a business may change as caused by a change in the cost and revenue factors, as a result may be a viable project originally sought to be not worth the effort. At layer chicken on the farms, feed and egg price changes is very large role because it is a component that gives the largest contribution to the current output of farm inputs. This is in line with the opinion Rasyaf (2006) which states the portion of the feed holds approximately 60-70% of the total cost of production. So that changes in feed prices will greatly affect the profits of farmers, as well as receiving the largest portion of layer chicken farm is the price of eggs.

FINDINGS AND RESULT

Structure Analysis of Costs, Revenues and Benefits

Analysis of farm businesses generally performed to determine the benefits. Profits earned in a farm business is the difference between revenues with expenditures or expenses. To produce a product needed some item costs. Production costs consist of fixed costs and variable costs. Fixed costs are all costs that do not depend on the magnitude of the resulting production, which include the cost of rent and depreciation. While the variable cost is the cost of changing the amount of which depends on the amount of production that will be produced or in other words the costs used for something, which goods are used up in a single production process. On the maintenance of layer chickens by early maintenance of Pullet, the variable cost of the purchase cost of feed, drugs and vaccines, electricity and water, labors and others. Fixed costs of layer chickens on the farm in the Sub-district Kedungpring Lamongan include ground rent, depreciation of chickens, depreciation of cages, depreciation of equipments and capital interest. Depreciation of chickens on the use of fixed costs, which average reached 64.15% or Rp 19,555,778 of the total fixed costs. While the total cost of fixed expenses spent by 11.33% or Rp 30,484,580 from the overall total cost.

Variable cost is a component that requires a considerable cost, reaching 88.67% or Rp 238,595,418 of the overall total cost. Variable cost of layer chicken on the farms in the Sub-district Kedungpring Lamongan include: feed, drugs and vaccines, electricity and water, labors, and others. Procurement of feed requires a considerable cost that reached 91.08% or Rp 217,315,698 of all variable costs. By looking at the feed condition is one component that must be considered for successful layer chicken farms.

Is an egg layer chicken products as a major source of revenue for farmers. Acceptance of the eggs average of 99.27% or Rp 345,500,564 of total revenue. Based on the above facts, the number of egg production and egg prices are also a component that should also get serious consideration for successful layer chicken farms.

Profits are the main target in layer chicken farms at the farmer in the Sub-district Kedungpring Lamongan average annual gross and net profit reached Rp 109,443,479 and Rp 78,958,899.

Table 1. Average Fee Structure and Revenue Layer Chicken Farms in Sub-district Kedungpring Lamongan Over One Year

Description	Amounts (Rp)	Percent		
		A	b	c
Fixed Cost Totals	30,484,580		100.00	11.33
1. Ground rent	691,667	2.27		
2. Depreciation of chickens	19,555,778	64.15		
3. Depreciation of cages	2,569,483	8.43		
4. Depreciation of equipments	4,404,763	14.45		
5. Capital interest	3,262,889	10.70		
Variable Cost Totals	**238,595,418**		**100.00**	**88.67**
1. Feed	217,315,698	91.08		
2. Drugs & vaccines	6,320,278	2.65		
3. Electricity & water	1,062,389	0.45		
4. Labors	11,534,722	4.83		
5. Others	2,362,331	0.99		
Cost Totals	**269,079,998**			**100.00**
RevenueTotals	**348,038,897**			**100.00**
1. Eggs	345,500,564		99.27	
2. Compost and sacks	2,538,333		0.73	

Sensitivity Analysis

Feasibility of a business may change as caused by a change in the cost and revenue factors, as a result may be a viable project originally sought to be not worth the effort. At layer chicken farm, feed and egg price changes is very large role because it is a component that gives the largest contribution to the current output of farm inputs.

The table 2 shows that the farm is still worth the effort or are developed if the following conditions: fixed feed and egg prices remain or go down to 15%; feed up to 5% and the eggs remain or go down to 15%; feed up to 10% and the egg prices remain or go down to 15%; feed up to 15% and egg prices remain or go down to 10%. The next farm is going to be not feasible because it would suffer losses if the feed price increase from 15% and at the same time a decline in the price of eggs from 15.

Table 2. Analysis of Advantages Over One Year to Change Rates Eggs and Feed on Layer Chickens in Sub-district Kedungpring Lamongan

Feed Price (Rp)	Eggs Price (Rp)			
	Fix	Down to 5%	Down to 10%	Down to 15%
Fix	78,958,899	61,683,871	44,408,843	27,133,814
Up to 5%	68,093,114	50,818,086	33,543,058	16,268,029
Up to 10%	57,227,329	39,952,301	22,677,273	5,402,244
Up to 15%	46,361,544	29,086,516	11,811,488	-5,463,541

DISCUSSION

Based on Table 1 that in general, layer chicken farms in the Sub-district Kedungpring Lamongan beneficial when it is in normal condition, meaning that if no drastic changes in the components of

the feed and eggs. If the gain in one year than the cost of production for a year will get the result of 29.34%. This means the business is feasible to be developed rather than save money in bank deposits which yield only about 3-5% per year (not including taxes).

The table 2 shows that farm businesses in the Sub-district Kedungpring for layer chickens are still worth the effort or are developed if the following conditions: fixed feed and egg prices remain or go to down to 15%; feed up to 5% and the egg prices remain or go to down to 15%; feed up to 10% and the egg prices remain or go to down to 15%; feed up to 15% and the egg prices remain or go to down to 10%. The next farm is going to be not feasible because it would suffer losses if the feed price increase from 15% and at the same time a decline in the price of eggs from 15%.

If further analysis that the change in the decline in egg of prices have a higher sensitivity rate than changes in feed prices increase and the overall sensitivity level is high when the price changes in both components. In general, layer chicken farms in the Sub-district Kedungpring Lamongan feasible to be developed, because the business will incur a loss if at the same time increase feed rates from 15% and followed by egg of prices decreased from 15%. So we need a support from various parties including the government in order to further develop the business centers, especially livestock farming of layer chickens in the area are still not very large population when compared with other areas in East Java.

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