Feasibility analysis of laying hen business of pullet period

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Abstract. This research is aimed to find out the feasibility of business on chicken farm owned by Mr. Sahlan in Ngebruk Village, Poncokusumo Subdistrict, Malang Regency. The material used is laying hens pullet period with a population of 6000. The method used in this research is survey method with quantitative approach. The variables observed were revenue, production cost, profit, Break Even Point (BEP), and R / C ratio. The research result showed that the acceptance of Rp. 308,312,000, production cost Rp. 274,238,151, BEP will be obtained if the sale price of livestock Rp. 35,588 / Kg and livestock sold 6,891.4 kg, R / C ratio of 1.12. Based on the results of the research can be concluded that the farm of laying hen pullet period belong to Mr. Sahlan deserve to continue.

1. Introduction
Livestock is one sector that plays an important role in meeting the needs of animal protein. The community's need for livestock products such as meat, milk and egg is increasing. This is in line with the increasing number of population, public awareness of the fulfillment of nutrition and the role of food substances, especially protein, and increase the ability of the community to utilize the maximum livestock so that the development of livestock sector has a positive impact for the community in nutrition improvement and positive impact for farmers improve prosperity.

Eggs as one type of commodity foodstuffs that contain high animal protein value of course also experienced an increase in market demand. This will certainly make the number of poultry breeders emerging new and also the old breeders will increase production to meet the availability of egg stock in the market. According to Yunus, the purpose of farming is to seek profit by applying management principles to optimally combined combinations of production factors [1].

Chicken pullet is layer-type chicken that kept aged 0-16 weeks. Based on the nutritional needs of chicken pullet divided into two periods namely starter (age 0-6 weeks) and grower (age 6-16 weeks or ready to spawn). Mr. Sahlan's farm only keeps it until the age of 16 weeks is then sold to laying hens to develop so that the maintenance process is faster and does not require a large workforce. This livestock business is very profitable for poultry chicken breeders and laying hens.

2. Materials and method
This research was conducted in the chicken farm owned by Mr. Sahlan in Ngebruk Village, Poncokusumo Sub-district, Malang Regency. The research material uses 6000 pullets. The research was conducted by using case study technique, observation, interview, questionnaire, and documentation. Questionnaire in the form of written questions submitted for breeders. Parameter observed are revenue, cost, benefit, Break Even Point (BEP), R/C ratio. Data were analyzed descriptively. Setyosari stated
descriptive research is research that aims to explain or describe a situation, event, object whether people, or anything related to the variable - variable can be explained both by numbers and words [2].

3. Results and discussion

3.1. Revenue
The income from this pullet chicken business comes from the sales of livestock, chicken manure, and used sack.

Table 1. Revenue during one period (4 months).

| Items                  | Amount (Rp) | Percentage (%) |
|------------------------|-------------|----------------|
| Sales of livestock     | 306,770,000 | 99.50          |
| Sales of chicken manure| 1,000,000   | 0.32           |
| Sales of used sack     | 542,000     | 0.18           |
| Total Revenue          | 308,312,000 | 100            |

The largest percentage of income came from the sale of livestock that is equal to 99.50%. This result is obtained from the sale of chicken grade 1 (weight ≥ 1.3 Kg /hen) as much as 5840 heads with a price of Rp. 52,000/hen. Chicken grade 2 (weight 1.20-1.29 Kg /hen) as many as 60 tail with the price of Rp. 41,600 /hen and poor chicken (weight <1.20 Kg /hen) and disabled chickens as much as 33 tail with the price of Rp. 18,000 /hen. The greater the weight of the chicken that is sold, so the greater the income. The population of poultry kept on the farm owned by Mr. Sahlan as many as 6000 hens with 2.5% mortality rate or 67 chicken. The mortality rate is quite good, this is in accordance with the statement of Tamalludin [3] which states that the standard of laying chicken mortality for tropical conditions is less than 4%. Cattle manure sales of 0.32% or Rp. 1.000,000 obtained from the sale of dirt as much as 200 sacks are sold at a price of Rp. 5,000/sack and sale of bags of feed packaging for Rp. 542,000 (0.18%) of total sales.

3.2. Cost
Production costs represent all costs incurred in a production process. Production style is grouped into two: fixed cost and variable cost.

Table 2. Total Production Cost during one period (4 months).

| Items            | Amount (Rp) | Percentage (%) |
|------------------|-------------|----------------|
| Fixed Cost       |             |                |
| Cage of depreciation | 3,000,000  | 1.09           |
| Tools of depreciation | 894,551    | 0.33           |
| Sub Total (I)    | 3,894,551   | 1.42           |
| Variable Cost    |             |                |
| Gas LPG          | 840,000     | 0.31           |
| Husk             | 1,600,000   | 0.58           |
| Paper            | 15,000      | 0.01           |
| Electricity      | 240,000     | 0.09           |
| Labors           | 6,300,000   | 2.30           |
| DOC              | 39,000,000  | 14.22          |
| Feeds            | 205,185,600 | 74.82          |
| Medicine         | 17,163,000  | 6.26           |
| Sub Total (II)   | 270,343,600 | 98.58          |
| Total Production Cost (I+II) | 274,238,151 | 100            |
Based from table 2, the costs incurred by Mr. Sahlan consist of fixed costs and variable costs. For a fixed cost of Rp. 3,894,551 (1.42%) and variable cost of Rp. 270,343,600 (98.58%). The largest variable cost proportion is for the purchase of feed that is Rp. 205,185,600 (74.82%). This is in accordance with the opinion of Santoso [4] which states that the feed is the most cost factor in the chicken farm business is reaching 75% of all production costs. Yusuf, et al [5] in his research revealed the largest cost in laying chicken farms is located on the purchase of feed and in the second rank is the cost of labor. Chicken have different nutrient on feed based on their type, age, and sex [6]. The laying hen need great feed to produce egg every day. Managing feed formulas is important step in poultry for reduce feed cost [7].

The price of chicken feed is very expensive because chicken feed ingredients are still purchased from abroad. Stephen [8] found out that relevancy towards the building of poultry incubator by using local knowledge and with the help of local materials. Average the poultry raising that was researched in small scale faced some main problems such as financial problem, high cost of feed, low price of egg and also high cost of vaccine and medicines [9]. In Nigeria also identified high cost of feeding and veterinary drugs as the main factors affecting layer production.

3.3. Benefit
The benefit is the total revenue earned less the total cost of production. The benefit from this farm for one maintenance period (4 months) is Rp. 34,073,849.

3.4. Break Even Point (BEP)
The pullet belongs to Mr. Sahlan has 3 kinds of grade due to having different body weight so the selling price is different. The calculation of the total weight of livestock body and the selling price of livestock can be seen in tables 3 and 4 below.

**Table 3. Calculation of the number of Weight of Livestock Body Sold.**

| Grade  | Average Weight (Kg) | Amount (chicken) | Total Production (Kg) |
|--------|---------------------|------------------|-----------------------|
| Grade 1 | 1,3                 | 5.840            | 7.592                 |
| Grade 2 | 1,25                | 60               | 75                    |
| Grade 3 | 1,18                | 33               | 38,94                 |
| Total  |                     | 5.933            | 7.705,94              |

**Table 4. Average Chicken Selling Price for 1 Period**

| Grade  | Average Weight (Kg) | Amount (chicken) | Price/chic (Rp) | Price/Kg (Rp) | Total Price (Rp) |
|--------|---------------------|------------------|-----------------|--------------|-----------------|
| Grade 1 | 1,3                 | 5.840            | 52.000          | 40.000       | 233,600,000     |
| Grade 2 | 1,25                | 60               | 41.600          | 33.280       | 1,996,800       |
| Grade 3 | 1,18                | 33               | 18.000          | 15.254       | 503,390         |

| Amount | 5.933               | 236,100,190      |
|--------|---------------------|-----------------|
| Average Weight (Kg) | 39.794            |

From the table above obtained BEP production of 6,891.4 Kg and BEP price of Rp. 35,588 / Kg. So it can be said that the farm father Sahlan get more profit because the sale exceeds the BEP.

3.5. R/C ratio
R / C ratio is obtained at a rate of 1.12, which means that the business of poultry farm owned by Mr. Sahlan is feasible to be developed.

4. Conclusion
The results showed that the farm business owned by Mr. Sahlan's pullet farm is feasible to be developed. This can be used as a reference for community farmers to start a pullet chicken farm. The government
must also support in terms of funding for smallholder farmers to borrow small business capital with low interest.

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