

## INCREMENTAL QUAIL FARMING BUSINESS AND SWITCHING VALUE IN BUSINESS DEVELOPMENT (CASE STUDY: INTEGRATED WASTE DISPOSAL SITE IN BOGOR CITY)

*Incremental Bisnis Peternakan Puyuh serta Switching Value Pada Pengembangan Bisnis (Studi Kasus: TPST Kota Bogor)*

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### ABSTRACT

Quail birds are considered one of the poultry commodities in the livestock sector. There is an imbalance between the supply and demand of quail eggs. The quail farm located at the integrated waste disposal site in Bogor City aims to increase its quail egg-laying capacity by 25 percent, with requires an investment. This study aims to analyze the feasibility of developing a quail farm at the Integrated Waste Disposal Site in Bogor City. The feasibility analysis encompasses both non-financial and financial aspects. The results of the non-financial aspect analysis indicate that the planned farm development is viable for implementation, as the feasibility scores for each non-financial aspect exceed 50 percent. The financial analysis, without development, yields an NPV of IDR 232,229,923, an IRR of 21 percent, a Net B/C of 2.04, and a Payback Period of 7 years and 5 months. On the other hand, the financial analysis, with development, yields an NPV of IDR 662,445,448, an IRR of 44 percent, a Net B/C of 3.80, and a Payback Period of 3 years and 9 months. Therefore, under both conditions, the business development plan is financially feasible. Additionally, there is an increase in net benefits of 53.15 percent with the development. Based on the switching value analysis, the farm is sensitive to a decline in income.

**Keywords:** farm, feasibility, quail

## ABSTRAK

*Burung puyuh merupakan salah satu komoditas unggas pada sektor peternakan. Terdapat ketidakseimbangan antara jumlah penawaran dan jumlah permintaan dari telur puyuh. peternakan puyuh pada tempat pembuangan sampah terpadu Kota Bogor ingin meningkatkan kapasitas puyuh petelurnya sebesar 25 persen sehingga diperlukan investasi. Penelitian ini bertujuan untuk menganalisis kelayakan pengembangan peternakan puyuh di Tempat Pembuangan Sampah Terpadu (TPST) Kota Bogor. Analisis kelayakan meliputi aspek non finansial dan aspek finansial. Hasil analisis aspek non finansial menunjukkan rencana pengembangan peternakan layak dijalankan karena hasil skor kelayakan pada masing-masing aspek non finansial lebih besar dari 50 persen. Hasil analisis finansial tanpa pengembangan menghasilkan NPV sebesar Rp 232,229,923 , IRR sebesar 21 persen, Net B/C sebesar 2,04, dan Payback Period sebesar 7 tahun 5 bulan. Analisis finansial dengan pengembangan menghasilkan NPV sebesar Rp 662,445,448 , IRR sebesar 44 persen, Net B/C sebesar 3,80, Payback Period sebesar 3 tahun 9 bulan sehingga pada kedua kondisi usaha layak dijalankan secara finansial. Serta didapatkan peningkatan manfaat bersih dengan pengembangan sebesar 53,15 persen. Berdasarkan analisis switching value peternakan sensitif terhadap penurunan pendapatan.*

**Kata Kunci:** *peternakan, kelayakan, burung puyuh*

## INTRODUCTION

Livestock is one of the sectors that plays a role in the protein consumption of Indonesians. Animal protein sources are cattle, buffalo, pigs, fish, chicken, duck, and quail. The livestock sector contributes 1.623 percent to Indonesia's GDP (BPS, 2020). Based on data from Dinas Ketahanan Pangan dan Peternakan (2019), the quail population has experienced high fluctuations with an average growth of 0.62 %/year from 2015-2019. The population peaked in 2017 and then declined by 3.48% in 2018. The decrease in the quail population in 2018 was due to avian influenza, which is easily spread in poultry. There were fluctuations in the quail population in West Java Province from 2019 to 2021 with an average growth of 142.47%/year (Dinas Ketahanan Pangan dan Peternakan, 2022). However, the quail population is expected to grow significantly by 2021. There is an unbalance between the supply and demand of quail eggs in 2021. There will be an imbalance between the supply and demand of quail eggs in 2021. This provides an opportunity for quail farmers to develop or increase their quail egg production capacity.

Quail labor farms have business prospects in the future (Fathurohman et al., 2014; Ningsih et al., 2023). The high nutritional content makes quail in great demand by consumers (Dewi et al., 2023). These livestock can be a source of income for rural communities (Sapira et al., 2021). Livestock activities generally involve the surrounding community in using labor (Arifah & Suprapti, 2021). In

business development activities, land and other investments are required. Land used for cultivation activities does not require large areas of land (Lestari et al., 2023). Yard land can be used for quail rearing (Sani et al., 2021). However, the problem that arises for quail entrepreneurs is when there is a decrease in prices (Sanjaya et al., 2016). Another factor, namely the increase in the price of quail feed, is another obstacle they face (Nisrina et al., 2022). The lack of breeders who cultivate quail makes the availability of quail limited (Soli, 2021; Fatmawati et al., 2018). In addition, limited capital in developing a quail business is an inhibiting factor in developing a business (Yuammar et al., 2023). The risk factor for quail death is of concern to breeders regarding the capital or investment that has been spent (Santi, 2022). In addition, limited capital is an inhibiting factor in developing a quail business. Even so, when the COVID-19 pandemic occurred, quail farming was still profitable to develop and become one of the community's economic empowerment (Alamsyah et al., 2020). This is in accordance with Sutriyono et al. (2022) that obtained an R/C value of 1.51.

The population of quail farms in Bogor City in 2022 was 1,238 farms (Dinas Ketahanan Pangan dan Pertanian Kota Bogor, 2023). The largest population of quail farms is in the West Bogor sub-district, followed by the South Bogor sub-district. The lowest population of quail farms is in the North Bogor subdistrict. One of the quail farms in Bogor City is the Integrated Waste Disposal Site. The farm saw that there was an imbalance between the demand and supply of quail eggs. Therefore, it established a quail farm at the end of 2019. In 2022, the farm's goal is to increase the size of its operation by 1,000 birds, or a 25 percent increase in production. The increase in production will have to be accompanied by an increase in investment. The investment required is the installation of cages and supporting infrastructure to raise laying quails.

The farm sells quail egg products to the residents as well as to several partners in the greater Jakarta area. The farm was established at the end of 2019. It is capable of producing an average of 28,000 eggs per day from 4,000 quails. The daily egg production does not meet the market demand of the farm. Therefore, the farmers need to increase the number of eggs produced per day to be able to seize market opportunities. The constraint that the farmers are faced with is the limited number of cages for 4,000 quails. Increasing the number of quails requires investment to build new cages for laying quails. The cost that needs to be incurred is the cost of the new cages and the cost of other supporting equipment.

The development of the farm may result in two conditions, namely without development condition and with development condition. The developed condition may provide additional benefits to the farm compared to the non-developed condition. Additional benefits with development can occur because there are additional factors of production that can be used. It is necessary to analyze the additional net benefits to the farm as a result of the expansion of

the scale of the farm. Therefore it is necessary to expand the business to meet consumer demand and improve the welfare of breeders (Poli et al., 2021; Setyaningrum & Nugroho, 2021).

Quail are birds that are susceptible to diseases. One disease that significantly affects quail is Tetelo disease. Tetelo disease can cause 100 percent mortality of quail (Listiyowati & Roospitasari, 2000). Quails affected by the disease will reduce their productivity. In addition to egg production, farmers need to consider rising feed prices. If the price of the feed increases, the cost to be borne by the farm will also increase. Therefore, it is necessary to analyze the switching value of quail feed price components and quail egg production under non-developed and developed conditions. Therefore, the risk is analyzed using a switching value

Using the previously mentioned phenomenon, the author wants to examine matter related to feasibility study, namely 1) non-financial feasibility of quail farm that located at the integrated waste disposable site in Bogor City; 2) financial feasibility of quail farm that located at the integrated waste disposable site in Bogor City in non-developed condition; 3) financial feasibility of quail farm that located at the integrated waste disposable site in Bogor City in developed condition; 4) Incremental net benefit of quail farm that located at the integrated waste disposable site in Bogor City between non-developed and developed condition; 5) Switching value of quail farm that located at the integrated waste disposable site in Bogor City because of decreasing production and increasing feed prices.

## RESEARCH METHOD

This research was conducted on a quail farm located at the Integrated Waste Disposal Site, Bogor City. The research site was purposefully selected. Based on interviews with business and farm owners, they will do business development with the purchase of 1,000 quails to increase the scale of the business. This research was conducted from November 2022 to June 2023. The data used in this research was obtained through direct observation in the field and direct interviews with the owner, workers, partners, and direct buyers of the Bogor City Integrated Waste Disposal Site. Other data required in this study were obtained from literature studies of various books, dissertations, the Internet, and the financial reports of the companies.

Data analysis and processing in this research are qualitative and quantitative, based on primary and secondary data from research results. A qualitative analysis was conducted on the non-financial aspects of quail farming in the Integrated Waste Disposal Site of Bogor City to obtain an overview and description of each non-financial aspect. A Quantitative analysis was conducted on non-financial and financial aspects using a Likert scale. The use of quantitative analysis aims to make it easier for researchers to draw conclusions.

It also aims to reduce bias in the research results. The use of the Likert scale in non-financial analysis has been carried out by Hanifa & Rosiana (2020).

The non-financial aspects of the analysis were market aspects, technical aspects, management and legal aspects, social, economic, cultural aspects, and environmental aspects. The non-financial feasibility analysis was conducted using a qualitative and quantitative method using a Likert scale. The Likert Scale is a scale used to measure the perceptions, attitudes, or opinions of a person or group about a social event or phenomenon (Bahrun et al., 2017). The quantitative analysis of non-financial aspects was conducted by assessing the feasibility score based on a scale of one to four (1-4). Score assessment 1-4 for strongly disagree, disagree, agree, and strongly agree. The calculation of the value of each attribute from each aspect is done by averaging and multiplying it by 100 percent, thus obtaining a feasibility score in the form of a percentage. The non-financial feasibility aspect is deemed not feasible if it produces a value of 1 percent to 50 percent. The non-financial feasibility aspect is deemed feasible if it produces a value of 51 percent to 100 percent (Nazir, 2009).

### Financial Analysis

The financial aspects were analyzed using quantitative analysis, namely investment criteria. Investment criteria consist of NPV, Net B/C, IRR, payback period, incremental net benefit and switching value. Switching value analysis aims to see the financial viability of the farm in the event of increasing input prices and decreasing farm production.

Net Present Value (NPV) is the total difference between the present value of benefits and the total present value of costs or the sum of the present value of additional net benefits over the life of the business (Nurmalina *et al.*, 2018).

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

Description:

$B_t$  = Benefit in year t

$C_t$  = Cost in year t

t = Years of business activity (t=0,1,2,3,....., n), the starting year can be year 0 or year 1 depending on the characteristics of the business

i = DR rate(%)

discount factor (DF) in year t-t =  $\frac{1}{(1+i)^t}$

Investment criteria based on NPV:

- a) NPV=0, the business is neither profitable nor loss
- b) NPV>0, the business is profitable and feasible
- c) NPV<0, the business is at loss and not feasible

Net B/C ratio is the ratio between positive net benefits and negative net benefits. The formula used to calculate Net B/C is:

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

Description:

$B_t$  = Benefit in year  $t$ ;  $C_t$  = Cost in year  $t$ ;  $n$  = Age of Business;  $I$  = Discount rate (%)

Investment criteria based on Net B/C:

- Net B/C = 1, the business is neither profitable nor loss
- Net B/C > 1, the business is profitable and feasible
- Net B/C < 1, the business is at loss and not feasible

Internal Rate of Return (IRR) shows the amount of return a business can get on its investment. IRR is the discount rate (DR) that results in NPV equal to 0. The formula used to calculate IRR is (Nurmalina et al., 2018):

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

Description:

$i_1$  = Discount rate that produces a positive NPV

$i_2$  = Discount rate that results in negative NPV

NPV1 = NPV that is positive

NPV2 = NPV that is negative

Payback period is one of the methods in assessing the feasibility of a business that is used to measure the period of return on business capital. If the payback period value is shorter than the economic life of the business, the business is declared feasible. If the payback period value is longer than the economic life of the business then the business is declared not feasible. The formula used to calculate the payback period is (Nurmalina et al., 2018):

$$\text{Payback Period} = \frac{I}{Ab}$$

Description:

$I$  = the amount of investment costs required

$Ab$  = net benefits that can be obtained each year

Incremental Net Benefit is the difference between net benefit with business and net benefit without business. Incremental Net Benefit shows whether factors that are not used or have not been used will provide additional benefits for the business being run. The formula used to calculate Incremental Net Benefit is (Nurmalina et al., 2018):

$$\text{Incremental net benefit} = \text{Net benefits with development} - \text{Net benefits without development}$$

Switching value is a calculation that measures the maximum change in an inflow component (decrease production) or outflow component (increase feed price) that can be tolerated for the business to remain feasible (Nurmalina et al., 2018). If the change exceeds the switching value, the business is no longer feasible. The switching value analysis is done by calculating the maximum change that can result from changes in the input or output component. Therefore, it is necessary to provide good feed so as to improve egg quality (Nugraha et al., 2018). In addition, increasing the weight of laying quail eggs can be done by adding 3% turmeric flour to the basal ration of the feed (Syamsuryadi et al., 2021). This can increase the quality and weight of quails.

## RESULT AND DISCUSSION

### 1. Non-financial Analysis

The financial analysis analyzed in this study includes market aspects, technical aspects, management and legal aspects, socio-economic and cultural aspects, and environmental aspects. The non-financial feasibility of the farm uses descriptive qualitative and quantitative methods using Likert scale method. All aspects are considered in the analysis of non-financial feasibility of the farm. The analysis studied results in interrelationship in each aspect. Based on this, it can be concluded that the development of quail farm at the Bogor City Integrated Waste Disposal Site is feasible because all the scores in each aspect are more than 50 percent. The non-financial feasibility aspect is deemed feasible if it produces a value of 51 percent to 100 percent (Nazir, 2009) Non-financial feasibility analysis results can be seen in the Table 1.

Table 1. Non-financial feasibility analysis results

Aspect	Total Feasibility Score	Average	Feasibility Percentage	Status
Market	18.66	3.11	77.75%	Feasible
Technical	20.66	3.44	86.08%	Feasible
Management and Legal	20.00	2.50	62.50%	Feasible
Socio, Economic, and Culture	18.25	3.65	91.25%	Feasible
Environmental	19.32	3.86	96.60%	Feasible
Average	19.38	3.31	82.84%	Feasible

### *Market Aspect*

Market potential can be examined using the demand and supply concepts. The demand concept can be analyzed using the chain ratio method. The farm cooperates with only two markets in the West Java region. In 2021, there are 21 markets in West Java (BPS Kota Bogor, 2022). Therefore, the market share of the farm is  $(2/21) \times 100$  percent = 9.52 percent. Therefore, quail farms in Bogor City Integrated Waste Disposal Site have a large market potential. The supply approach can be seen from the ability of an enterprise to produce a product, provide services, or a combination of both. The current production capacity of the Quail Farm is 21,000 eggs per week. Currently, the farm has partnerships with three markets. Each week the farm needs to produce 18,000 quail eggs for these markets. This shows the market potential that can grow with more farm partners. Marketing strategy will be described below:

#### 1) Product

The quail farm at the Bogor City Integrated Waste Disposal Site sells quail egg products to partners and local residents. The farm also sells quail meat, quail manure, and quail feed to local residents.

#### 2) Place

The farm is located in Katulampa, Bogor City. The location is quite close to residential areas. The location of the farm can be easily reached by consumers and farm partners for quail egg collection so as to facilitate the distribution process.

#### 3) Price

The price set by the farm to the final consumer is IDR 500 per egg. While the price set to partners (resellers) is lower at IDR 360 per egg. This aims to expand the sales reach of the farm's products. The farm gives partners the freedom to determine the selling price of eggs to their consumers.

#### 4) Promotion

The farm does not yet have an effective promotion strategy. The farm only promotes through online and offline media. Promotion through online media is done through Whatsapp only. Offline promotion is done verbally to friends, relatives, and potential partners.

### *Technical Aspect*

The location of the quail farm at the Bogor Integrated Waste Disposal Site is at Katulampa RT/RW 004/016, Bogor City. The location was chosen because of land availability, easy transportation access, water and electricity availability.



The institution that supports farm activities is the market. However, the location between the market and the farm is quite far, so it takes a long time. The farm is in a building with a size of 9 meters x 12 meters. The building is made of habel bricks as walls. The roof uses zinc sheets and the floor is made of cement.

During the cage preparation process, disinfectants are sprayed to kill germs and bacteria in the cage. The laying quail care process is carried out every day. The activities performed are building cleaning, cage cleaning, routine inspection of laying quail, and feeding and drinking. The egg collection process is done using a tray. Then comes the sorting process between eggs that can be sold and those that cannot. This is followed by the packing process. The cycle of raising laying quail is completed by culling.

### *Management and Legal Aspect*

Quail farms in the Integrated Waste Disposal Site of Bogor City are small businesses engaged in the upstream subsystem of agribusiness by producing quail eggs as the main product. The farm still has a simple management system. The farm is a family business that is run in a non-formal manner and does not yet have an organizational structure. The farm is run by three people led by Mrs. Sulis. The farm has a clear division of tasks that is easy for each employee to understand. Until now, the farm does not have a written business license. However, the farm is in the process of making a Surat Keterangan Usaha (SKU), Nomor Induk Berusaha (NIB), dan Izin Usaha Mikro Kecil (IUMK). Therefore, the farm has not yet paid taxes.

### *Socio Economic and Culture Aspect*

The socio-economic and cultural aspects take into account the response of the surrounding community to the quail farm at the Bogor City Integrated Waste Disposal Site. The farm is very well received by the surrounding community, which can be seen from the community's response. The farm sometimes provides jobs to the surrounding community. The cultural aspect of the farm is acceptable or in harmony with the existing culture in the surrounding community.

### *Environmental Aspect*

The quail farm at the Bogor City Integrated Waste Disposal Site is located near a densely populated residential area. The security of the farm is guarded by officers from the neighborhood. Waste management is done very well. The manure produced by the farm will be dried in the sun so that it does not produce an excessive odor. Quail manure is used as fertilizer for the garden at the farm location.

## 2. Financial Analysis

### *Outflow*

The outflow components analyzed include investment costs, fixed costs, and variable costs. The existence of business development causes an increase in investment costs and variable costs. Increasing the capacity of laying quail by 25 percent increases the variable cost by 63.27% dan investment cost by 7%. Outflow components of the quail farm in the integrated waste disposal site of Bogor City can be seen in the Table 2.

Table 2. Outflow Components of the Quail Farm In The Integrated Waste Disposal Site of Bogor City

Name	Without Development (IDR)	With Development (IDR)
Investment Cost	223,886,800	240,922,800
Fixed Cost	168,210,524	168,210,524
Variable Cost	1,446,866,549	2,362,240,346

There are two conditions in the feasibility analysis of quail farming in the Integrated Waste Disposal Site of Bogor City. There is an increase in investment costs by 7.61 percent. The increase in investment cost was due to the purchase of items such as quail cages, mosquito nets, heat lamps, dan water taps. A fairly large investment cost to impact the feasibility value (Rabbani and Rosiana, 2022). Additional costs in outflow are fixed costs incurred by quail farms in the Bogor City Integrated Waste Disposal Site are relatively small. There is no difference in fixed costs between the situation without development and with development. This can occur because there is no difference in fixed cost components such as electricity and employee salaries. Variable costs are influenced by the number of quail being raised. The highest variable cost is the cost of quail feed. Quail feed cost account for 80 percent of variable costs. Another major component of variable cost is the quail it self. Quail productivity begin to decline when they reach 18 months of age. Therefore, farm need to purchase new quail every 18 months.

### *Inflow*

The inflow component analyzed consists of two components, namely the acceptance component and the salvage value. There are two conditions in the feasibility analysis of quail farming in the Integrated Waste Disposal Site of Bogor City. The first condition is without development. In this situation, the total revenue of the farm during the business life is IDR 2,140,509,240. The condition with development is IDR 3,574,454,971. There is an increase of revenue of 66.99 percent. It occur because there is an increase sales of the farm. The major

contributor is sales of quail eggs and quail carcass. Salvage value can be an additional benefit for quail farms in the Bogor City Integrated Waste Disposal Site. In the condition without development, the residual value of the farm is IDR 1,361,542. In the condition with development is IDR 1,493,042. There is an increase of 9.66 percent. This can happen because there is an additional equipment used by the farm. Inflow components of the quail farm in the integrated waste disposal site of Bogor City can be seen in the Table 3.

Table 3. Inflow Components of The Quail Farm In The Integrated Waste Disposal Site of Bogor City

Name	Without Development (IDR)	With Development (IDR)	Percentage (%)
Revenue	2,140,509,240	3,574,454,971	66.99
Salvage Value	1,361,542	1,493,042	9.66

### *Profit and Loss Analysis*

The calculation of net profit from quail farming in the Integrated Waste Disposal Site of Bogor City is obtained by subtracting the revenue component with the operational cost component consisting of fixed costs and variable costs. Each year quail farms get different gross profits. This happens because it has been adjusted to inflation 5.47 percent in the year analysis. Details of the farm's projected profit and loss can be seen in Table 4.

Table 4. Profit And Loss Projection of Quail Farming In The Integrated Waste Disposal Site of Bogor City

Year	Net Benefit (IDR)	
	Without Development	With Development
1	-26,091,417	-25,592,910
2	-20,613,171	-5,115,814
3	123,117,018	249,691,777
4	23,437,882	51,148,976
5	26,078,816	98,339,697
6	28,595,034	103,718,878
7	31,387,060	109,392,301
8	34,331,809	115,376,060
9	37,437,636	121,687,130
10	42,068,086	129,828,993

### *Investment Feasibility Criteria*

Quail farms in the Bogor City Integrated Waste Disposal Site use their own capital, so the percentage discount rate uses the deposit interest rate from the farm owner's bank. The farm owner uses BCA with an interest rate of 2.5 percent in 2022. The breakdown of the farm's investment feasibility can be seen in Table 5. It can be concluded that both circumstances are financially feasible to run. When viewed from the NPV value, the situation with the development is better with an NPV of IDR 662,445,448. The situation with the development has an IRR value of 44 percent. It can be seen that the Net B/C value is 3.80 and the payback period is 3 years and 9 months.

Table 5. Investment Feasibility Criteria For Quail Farming At The Bogor City Integrated Waste Disposal Site

Feasibility Criteria	Feasible if *)	Without Development	Conclusion Without Development	With Development	Conclusion With Development
NPV (IDR)	NPV > 0	232,229,923		662,445,488	
IRR (%)	IRR > DR (2,5%)	21		44	
Net B/C	Net B/C > 1	2.04	Feasible	3.80	Feasible
PP (years)	PP < Years business (10 Years)	7.42		3.75	

\*) source (Nurmalina et al., 2018)

### *Incremental Net Benefit*

Incremental Net Benefit compares the net benefit between the incremental net benefit of doing business or development with the net benefit without business or development at the same place and time. Details of the incremental net benefit of quail farming in the Bogor City Integrated Waste Disposal Site can be seen in Table 6. This shows that with business development, the farm will get significant additional benefits. The results of the incremental analysis of net benefits show that the increase in benefits is equal to of 53.15 percent. This percentage shows that with business development, the profits obtained from the business will increase by 53.15 percent when compared to without development. So, the decision to expand your business is the right thing to do.

Table 6. Incremental Net Benefit Result

Year	Incremental Net Benefit (IDR)
1	(14,922,743)
2	16,691,107
3	128,367,004
4	29,029,917
5	49,589,503
6	52,472,555
7	55,201,804
8	58,370,055
9	61,497,897
10	64,925,888

### *Switching Value*

The components used in the switching value analysis are an increase in feed prices and a decrease in production in the no-development and with-development conditions. These two components are the components that have the most influence on the business. The results of the switching value analysis can be seen in Table 4. The maximum production reduction that can be tolerated with development is 21.42 percent. It shows if it happened decreased production of more than equal to 21.42 percent then the farm already not worth running. Increase in the maximum feed price that can be tolerated tolerance without expansion was 20.89 percent. That matter shows if there is an increase in feed prices more than equal to 20.89 gears then it is not feasible to run. Price increase maximum feed that can be tolerated with development was 35.68 percent. This shows if there is an increase in price feed is more than equal to 35.68 percent then the cage is not feasible to run. So that on conditions without development and with production decline feed price is more sensitive than price increases feed. This means that feed prices are the most influential factor in business development activities compared to the decline in quail production. Therefore, companies need to anticipate the risk of increasing feed prices by looking for alternative sources of feed supply. This is because the biggest component is the cost of quail feed.

Table 7. Switching Value Result

Description	Limit of Change (%)	
	Without Development	With Development
Decrease in production	12.53	21.42
Increase in feed price	20.89	35.68

## CONCLUSION AND SUGGESTION

### Conclusion

1. In the market aspect, technical aspect, management and legal aspect, social, economic and cultural aspect, and environmental aspect, it is concluded that the business development to be carried out by quail farms in the Integrated Waste Disposal Site of Bogor City is feasible.
2. Quail farming in the Integrated Waste Disposal Site of Bogor City is feasible under the conditions without development and with development with an interest rate of 2.5 percent and a business life of 10 years. In the no-development condition, the NPV is IDR 232,229,923, the IRR is 21 percent, the net B/C is 2.04, and the payback period is 7 years and 5 months. In conditions with development, the NPV was obtained at IDR 662,445,448, IRR of 44 percent, Net B/C of 3.80, and Payback Period of 3 years and 9 months. Thus, there is an increase in NPV of 185.25 percent, an increase in IRR of 112.03 percent, an increase in Net B/C of 85.76 percent, and a faster PP of 103.3 percent from conditions without development to conditions with development.
3. Quail farming at the integrated waste disposal site in the city of Bogor showed an increase in benefits with development of 53.15 percent.
4. Without development quail farms in the Bogor City Integrated Waste Disposal Site has a switching value of a decrease in production of 12.53 percent and has a switching value of an increase in feed prices of 20.89 percent. This means that in the without development condition, the decrease in production is more sensitive than the increase in feed prices. With development of quail farms in the Integrated Waste Disposal Site of Bogor City, the switching value of a decrease in production is 21.42 percent and has a switching value of an increase in feed prices of 35.68 percent. So, under conditions with the development of a decrease in income is more sensitive than an increase in feed prices.

## Suggestion

1. Quail farms in the Integrated Waste Disposal Site of Bogor City can carry out business development by increasing cage capacity by adding 84 sets of quail cages, 2 stop taps, 4 meters of mosquito nets, and 2 units of warming lamps.
2. The farm needs to improve several things based on the results of the analysis of the non-financial aspects of each assessment component. These can be ranked from most important to least important based on the assessment of each component. In the management and legal aspects, farms are advised to process licenses and certifications to run the business so that farms can pay taxes regularly. In the technical aspect of the farm, it is recommended to look for partners that are closer to the farm. This can be done by looking for nearby markets that sell quail-derived products. In the market aspect, farms are advised to build a brand image by actively using social media as a way to promote farm products. This can be done by joining quail-related groups and selling quail in the market. In the social, economic, and cultural aspects, it is recommended that farms build a sense of kinship with the surrounding community. This can be done by organizing social activities that have a high level of community participation. In the environmental aspect, the farm is advised to increase the workforce that focuses on maintaining environmental security. In order to reduce the risk of unwanted actions in the quail farm environment.
3. Farms can anticipate a decrease in production by maintaining the health of laying quails. This can be done by giving vitamins routinely and separating quails that are affected by the disease so that it does not spread to other quails.

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