Financial feasibility pepper order in Bukit Kemuning Village North Lampung

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Received : 16 June 2022 Revised : 19 June 2022 Accepted : 21 June 2022

ABSTRACT: This paper is aimed at analyzing the effect of Analyzing the financial feasibility of pepper farming and the efficiency of pepper trading in Bukit Kemuning Village, Bukit Kemuning District, North Lampung Regency. The data analysis research method used is the analysis of the level of profit and financial feasibility of pepper farming, with investment eligibility criteria, namely Gross Benefit-Cost Ratio (Gross B / C ratio), Net Benefit-Cost Ratio (Net B / C Ratio), Net Present Value (NPV), Internal Rate of Return (IRR) and Payback Period (PP), sensitivity analysis. The results obtained are NPV of IDR 6.167,301, IRR of 24%, Net B / C of 1.31 and PPB of 7.61 based on the calculation of investment criteria, it can be said that pepper farming in Bukit Kemuning Village, Bukit Kemuning District is feasible to be cultivated.

Keywords: financial feasibility, IRR, NPV, pepper

INTRODUCTION

Indonesia is the main supplier of black pepper to the United States market with shipments of 20,423 metric tons (47%), followed by Brazil 8,715 metric tons (20%), Vietnam 7,963 metric tons (20%) and India 5,600 metric tons (13%). The price of black and white pepper changes every year. in 2018 the price of black pepper was at the level of Rp. 29,500 and in 2019 it was Rp. 30,000 (Utoyo & Yolandika, 2018). Pepper agribusiness development faces problems that are not simple, including: the procurement of production facilities is not efficient, the availability of superior seeds and fertilizers is limited, cultivation technology is still conventional, processing technology is not hygienic, and the role of farmer institutions and marketing is not supportive. Integrated development in the commodity system starting from the subsystem of production facilities, farming (on-farm), processing and increasing value added (value added), business/production orientation to meet market needs (market driven-off-farm), supporting institutions, and other supports in an integrated manner. integrated and sustainable is an important agenda that must be carried out (Yolandika et al., 2017).

People's pepper plantations have several weaknesses, namely low pepper productivity, stem rot disease attacks, and seeds that are less than superior which causes the pepper planting area to tend to continue to decline. Institutional and lack of knowledge of farmers about the importance of the pepper agribusiness system also makes farmers less motivated to continue to run pepper farming and prefer to convert to other plantation crops such as coffee plants. Therefore, it is necessary to investigate the financial feasibility and efficiency of the pepper farming business system as information on profitable business research for farmers (Noer et al., 2018).

METHOD

The object of this research is the analysis of financial feasibility and efficiency of the pepper trading system. The research was conducted in Bukit Kemuning Village, Bukit Kemuning District, North Lampung Regency. The research uses a quantitative design with case study research techniques. Sampling for the financial feasibility of pepper farming was determined based on land ownership stratification of 0.5 ha, 1
ha and 2 ha, because the average type of pepper farming tended to be homogeneous so that the sample was taken by 2 farmers/hamlets. There are 2 hamlets in Bukit Kemuning Village, namely hamlet I and hamlet II. The number of respondents in the trading system consisted of 12 farmers, 2 collectors, 1 wholesaler, 3 Bukit Kemuning retailers, 2 Bandar Lampung retailers and 20 final consumers. According to (Sugiyono, 2019), analysis of the level of profit and financial feasibility of pepper farming, with investment feasibility criteria (Setiawinata, A, P. Wahyudi, B. Purba, P, 2018).

Net Profit (NPV) is the present value of the income stream generated by the investment. The value generated by the NPV calculation is in the form of currency units (Rp) (Sutarni et al., 2019). Internal Rate of Return (IRR) is the average annual internal profit rate of businesses that make investments and is expressed in percent (Sutarni et al., 2018). Net Benefit Cost Ratio is a comparison of the present value of the net benefit which is positive with the present value of the net benefit which is negative (Sagala, 2011). Payback Period (PP) is the period of time needed to pay back all the costs that have been incurred in investing in a business (Assauri, 1999).

RESULT AND DISCUSSION

Topographically, 80% of Bukit Kemuning District is highland and moderate, where this condition is used by the majority of the population for plantation and agricultural land. The rest is for rice fields and freshwater fish cultivation as well as trade and home industry. Geographically, Bukit Kemuning Village, North Lampung Regency, which is located on the Sumatran crossing with a position of 140 degrees and 445 degrees South latitude, has an area of approximately 17.0 km. The majority are aged 31-59 years with a percentage of 75% and a relatively low level of education, which is 67% only elementary school graduates. The majority of farmers are the sons of the region, namely the Ogan Komering tribe by 83%. The longest experience of pepper farming is > 16 years (67%). As many as 67% of the total farmers have a land area of <1 ha with the most pepper plants aged 10-11 years 59%. Traders who became respondents in this study were 8 people with an age range of 35-50 years and education levels of SMA and S1 graduates. The experience of respondents in running their business is in the range of 9-15 years.

Pepper farming costs
1. Investment Cost
Investment costs are all costs incurred when the plant has not been able to produce. The investment costs incurred include the cost of land and the cost of making a hut (Maulana et al., 2020). The investment costs include an investment cost of land rental fees for 10 years of Rp. 10,000,000 and the cost of making a hut of Rp. 5,000,000 with a total cost of equipment such as a hoe of Rp. 200,000, a machete of Rp. 100,000, a sprayer of Rp. 500,000, strikethrough of Rp. 140,000, crowbars of Rp. 100,000, tarpaulins of Rp. 460,000, rakes of Rp. 50,000 and depreciation costs of Rp. 310,000 with a total investment cost of Rp. 17,195,000 and costs for the 6th year there is a cost of purchasing new equipment of Rp. 490,000. Fixed costs for years 6-10 at depreciation expense of $155,000.

2. Fixed costs (TFC)
Fixed costs are costs that are fixed in nature even though they do not carry out or carry out any production activities. Fixed costs incurred are depreciation costs and group membership fees (Suyadi et al., 2018). The average depreciation cost for years 1-5 is Rp. 310,000 and group membership fees are Rp. 5,000/month so that in one year it is Rp. 60,000/year. The average depreciation expense for years 6-10 is Rp. 155,000. The contribution fee for the group is Rp. 60,000/year, so the total fixed costs for years 1-5 are Rp. 370,000 and the total fixed costs for years 6-10 are Rp. 215,000.

3. Variable costs
Variable costs are costs whose amount is influenced by the amount of production and runs out in one production. Variable costs include the cost of seeds, fertilizers, medicines, labor, equipment, taxes and others (Susilowati, Sri Hery., Tinaprilla, 2020). The cost of seeds used by respondent farmers is local seeds. The
Price of local pepper seeds in the market is Rp. 50/stem in 2 ha of land, ideally 5,000 pepper trees are planted with 3 seeds/tree, so the cost of seeds required is Rp. 425,000. The cost of fertilizer for mature plants is IDR 727,833/year, for details on fertilizer costs, see Appendix 5. The cost of drugs for mature plants is IDR 954,167/year. The drugs used in producing plants include furadan, gramaxone, and regen. The total cost of labor required for pepper farming is Rp. 232,791/year, variable costs in year 1 are Rp. 2,339,791.

Variable costs in 2-3 years the cost of fertilizer on mature plants is Rp. 727,833/year. Details consisting of fertilizer costs can be seen in Appendix 5. The fertilizers used are urea, NPK, SP36 and manure fertilizers. The cost of drugs in yielding plants is Rp. 954,167/year. The drugs used in producing plants include furadan, gramaxone, and regen. The total cost of labor required for pepper farming is Rp. 440,000 labor which is calculated at the time of fertilization, spraying and replanting. The total cost is IDR 2,122,000.

Variable costs for years 4-10 consist of fertilizer costs for mature plants of Rp. 727,833/year, the fertilizers used are urea, NPK, SP36 and manure. Details of fertilizer costs can be seen in Appendix 5. The cost of drugs for mature plants is Rp. 954,167/year. The drugs used in producing plants include furadan, gramaxone, and regen. The total labor cost required for pepper farming is Rp. 502,209. The calculated labor is at the time of 2-3 fertilization, spraying, harvesting and post-harvest. The total cost is IDR 2,184,209.

**Pepper farming acceptance**

Prices used in cash and cash flow are assumed to be constant (Saputra, 2019). The price used in the study is the price that applies when interviewing farmers in Bukit Kemuning Village, which is Rp. 35,000. Total production for the last 10 years obtained by Poktan data recorded in the production year book of Poktan in Bukit Kemuning Village, the projected total revenue for 10 years was recorded at Rp. 97,200,000.

**Financial feasibility analysis**

The concept of business feasibility is a tool that is consciously designed to realize new findings or new businesses and the development of existing businesses objectively (Ramadhan et al., 2014). The financial feasibility assessment of a business can be seen from several investment criteria, namely the Net Benefit-Cost Ratio (Net B/C Ratio), Net Present Value (NPV), Internal Rate of Return (IRR) and Payback Period (PP), sensitivity analysis (Kadariah, 2001). Financial feasibility analysis on pepper farming for 10 years, this is based on the economic age of pepper plants.

| Investment criteria | Standard | Value     | Results |
|---------------------|----------|-----------|---------|
| NPV                 | > 0      | 6,167,301 | Worthy  |
| NET B/C             | > 1      | 1,31      | Worthy  |
| IRR                 | > Df (18%) | 24%      | Worthy  |
| PPB                 | 10 tahun | 7,659,324,353 | Worthy |

Based on Table 3, it can be seen that according to the NPV criteria obtained, it is Rp. 6,167,301, meaning that the business is feasible to run because it is more than 0. The Net B/C value of 1.31 means that the business is feasible to run because the value is more than 1. Based on the IRR criteria, the value is obtained. 24% means that the business is feasible to run because the IRR value is higher than the bank interest rate of 18%. The payback time in pepper farming is achieved in the fourth year, this means that the payback period (PP) is faster than the economic life of the business, which is ten years, so farming is feasible to run.

**Sensitivity analysis**

Sensitivity analysis is carried out by taking into account one of the above possibilities. The rate of increase in the cost of a production which will cause the value of NPV, IRR, Gross B/C, and Net B/C is no longer profitable, then at that point the project is not feasible. The changes studied are an increase in production costs of 5%. Other changes are a decrease in the amount of production by 5% and a decrease in selling prices by 5%. In the 5% increase in production costs, there are no investment criteria that indicate it is not feasible.
Table 2. Sensitivity Analysis

| Changed             | Standard   | Changed value | Results  |
|---------------------|------------|---------------|----------|
| Production Cost up 5% |            |               |          |
| NPV                 | > 0        | 5.079.053     | Worthy   |
| IRR                 | > DF (18%) | 23%           | Worthy   |
| NET B/C             | > 1        | 1.24          | Worthy   |
| PP                  |            | 8.23863115324571 | Worthy   |
| Sell Price down 5%  |            |               |          |
| NPV                 | > 0        | 6.192.123     | Worthy   |
| IRR                 | > DF (18%) | 25%           | Worthy   |
| NET B/C             | > 1        | 1.32          | Worthy   |
| PP                  |            | 7.22867600114068 | Worthy   |
| Production down 5%  |            |               |          |
| NPV                 | > 0        | 4.594.540     | Worthy   |
| IRR                 | > DF (18%) | 23%           | Worthy   |
| NET B/C             | > 1        | 1.24          | Worthy   |
| PP                  |            | 7.9495162069013 | Worthy   |

CONCLUSION

Based on the results of financial calculations and investment criteria, it can be concluded that pepper farming in Bukit Kemuning Village, Bukit Kemuning District, North Lampung Regency is feasible for up to 10 years. Pepper business can be a profitable business in the future.

REFERENCE

Assauri. (1999). Manajemen Ekonomi Pertanian Indonesia. Penerbit Buku Kompas.

Maulana, I., Yulinda, E., & Hendri, R. (2020). Analisis Usaha Penangkapan Ikan Laut Dengan Alat Tangkap Jaring Insang (Gillnet) Di Panipahan Kecamatan Pasir Limau Kapas Kabupaten Rokan Hilir Provinsi Riau. *Jurnal Sosial Ekonomi Perairan*, 1(2), 30–38.

Noer, S. R., Zakaria, W. A., & Murniati, K. (2018). Analisis Efisiensi Produksi Usahatani Padi Ladang Di Kecamatan Sidomulyo Kabupaten Lampung Selatan. *Jurnal Ilmu-Ilmu Agribisnis*, 6(1), 17. https://doi.org/10.23960/jiia.v6i1.17-24

Ramadhan, A., Firdaus, M., & Wijaya, R. A. (2014). Analisis Nilai Tukar Nelayan (NTN) Pelagis Besar Tradisional. *Jurnal Sosial Ekonomi Kelautan Dan Perikanan*, 9(1), 1–11. https://doi.org/10.15578/jsekp.v9i1.30

Sagala, E. (2011). *Manajemen Panen dan Pasca Panen Ubikayu (Manihot esculenta Crantz) PT Pematang Agri Lestari Untuk Bahan Baku Industri Tapioka PT Sinar Pematang Mulia I*. Institut Pertanian Bogor.

Saputra, B. (2019). *Analisis Struktur Biaya, Pendapatan Usahatani Dan Pemasaran Mentimun Di Kecamatan Way Sulan Kabupaten Lampung Selatan*. Universitas Lampung.

Setiawinata, A, P, Wahyudi, B, Purba, P, A. 2018. (2018). Pengaruh Produksi Hasil Tangkapan, Pengeluaran Ramah Tangga dan Aksesibilitas Lembaga Keuangan Formal Terhadap Nilai Tukar Nelayan di Muara Angke Jakarta Utara Tahun 2018. *Jurnal Ilmu-Ilmu Agribisnis*, 3(1), 209–228.

Sugiyono. (2019). *Metode Penelitian Kuantitatif Kualitatif Dan R & D*. Aliabeta.

Susilowati, Sri Hery., Tinapirilla, N. (2020). Analisis Efisiensi Usaha Tani Tebu Di Jawa Timur. *Jurnal Penelitian Tanaman Industri*, 18(4), 162. https://doi.org/10.21082/jittri.v18n4.2012.162-172

Sutarni, S., Irawati, L., Unceawati, B., & Yolandika, C. (2019). Proses Pengambilan Keputusan Pembelian Sayuran Hidroponik Di Kota Bandar Lampung. *Journal of Food System & Agribusiness*, 2(1), 17–24.
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https://doi.org/10.25181/jofsa.v2i1.1107

Sutarni, Saty, F. M., & Unteawati, B. (2018). Distribution Analysis of the Supply Chain of Catfish (Pangasius) Agribusiness in Kota Gajah District, Central Lampung, Indonesia Distribution Analysis of the Supply Chain of Catfish (Pangasius) Agribusiness in Kota Gajah District, Central Lampung. IOP Conf. Series: Earth and Environmental Science. https://doi.org/10.1088/1755-1315/209/1/012023

Suyadi, Syahdanur, & Suryani, S. (2018). Analisis Pengembangan Usaha Mikro Kecil dan Menengah (UMKM) di Kabupaten Bengkalis-Riau. Jurnal Ekonomi KIAT, 29(Juni), 84–93.

Utoyo, B., & Yolandika, C. (2018). Technical Efficiency of Palm Oil Plantation in Lampung, Indonesia. International Journal of Sustainable Biomass and Bioenergy, 1–5.

Yolandika, C., Nurmalina, R., & Suharno, S. (2017). Analisis Nilai Tambah Brokoli Kemasan Cv. Yan’S Fruits and Vegetable Di Kecamatan Lembang Bandung Barat. Journal of Food System & Agribusiness, 1(1), 30–37. https://doi.org/10.25181/jofsa.v1i1.84