



Business Feasibility Study in Sharia Review of Silina Company Using Social Cost-Benefit Analysis

Fetriawati Fetriawati, Justan Riduan Siahaan, Hamzah Haz

Hasanuddin University, Makassar, Indonesia

fetriawati21a@student.unhas.ac.id

Abstract. This study aims to evaluate the business feasibility of Silina Co. as an environmentally friendly organic fertilizer business using the social cost-benefit analysis approach with a sharia perspective. The research method used is descriptive qualitative research using the Social cost-benefit analysis (SCBA) approach which is carried out by analyzing primary and secondary data. Primary data was obtained from interviews with business owners and respondents related to the organic fertilizer business. Secondary data was obtained from sources related to organic fertilizer business development. The results showed that Silina Co. has the potential to become a successful business and provide great economic and social benefits. In the SCBA analysis, the results show that Silina Co. generates significant social and economic benefits and has the potential to generate good profits in the future. On the sharia side, Silina Co. also meets the sharia principles in the organic fertilizer business, such as environmental sustainability, social welfare, and economic justice. In conclusion, the business feasibility study on Silina Co. as an environmentally friendly organic fertilizer business using the social cost-benefit analysis approach with a sharia perspective shows that this business has the potential to become a successful business, provides great economic and social benefits, and meets the principles of sharia in the organic fertilizer business. It is recommended that Silina Co. strengthen the promotion and marketing of its products and increase partnerships with local farmers to increase business effectiveness and expand market reach.

Keywords: Silina, Business Feasibility Study, SCBA, Sharia

1 Introduction

Businesses from all sectors are growing rapidly. This is as part of the form to fulfill the needs of society. Entrepreneurship is defined as any activity organized by individuals engaged in trade (producers, consumers, traders and industries where businesses exist to improve their standards and quality of life) [1]. One of the rapidly growing businesses is in the halal industry.

The large number of consumers of halal products in Indonesia can increase the potential for the development of the halal industry to meet the needs of domestic and foreign consumers. Demographically, Indonesia has the largest Muslim population in the world. According to BPS in 2021, 87.18% of Indonesia's 237,641,326 population

is Muslim. This certainly has the potential to make Indonesia the largest consumer of halal products in the world. In reality, Indonesia's halal industry has the potential to add \$5.1 billion or IDR 72.9 trillion to its annual GDP. According to the Indonesia Halal Market Report 2021/2022 in dollars, this amount is achieved due to increased exports, import substitution, and foreign direct investment (FDI). This makes the halal industry a great potential in Indonesia. One of the sectors that has great potential for the halal industry in Indonesia is the agricultural sector. BPS data for 2021 shows that Indonesia currently only has 33.4 million farmers out of 270 million people.

The main characteristic of Indonesian farmers is their dependence on the use of chemicals such as chemical fertilizers and pesticides which leads to nutrient degradation in the land due to the penetration of pollutants such as heavy metals. By 2022, the Food and Agriculture Organization categorizes as much as 72% of the total agricultural land area in Indonesia as suboptimal or severely damaged due to the continuous use of inorganic products on agricultural land [2]. According to data from the Agricultural Research and Development Center, the average farmer in Indonesia uses 350-450 kg of chemical fertilizer for every 1 hectare of land [3]. This dependence will have an impact on the productivity of agricultural land in the future.

Currently, chemical fertilizer products such as SP36, phonska, KCl on the market contain many heavy metals (Al, Pb, Cu, and Fe). These types of substances are toxic which result in nutrient degradation so that the soil becomes acidic [4]. Some of these contaminants will be absorbed by agricultural crops which mediate the entry of these toxic substances into the human body [5]. Besides not being environmentally friendly, chemical fertilizers also cause other problems that make it difficult for farmers. High dependence on chemical fertilizers causes scarcity, leading to significant price spikes. One of the current efforts is the use of biofertilizers or biofertilizers. However, the use of this type of fertilizer has not been effective enough due to several weaknesses such as the short cycle of microorganisms and the need for large volumes [6].

Silica is an oxide mineral that can effectively break down heavy metal compounds such as Fe, Al, Pb, so that the toxic properties of these compounds can be reduced [7] [8][9]. Silica as an active substance is able to reduce soil pH acidity towards neutral through the formation of ligand complex compounds in the soil [10]. In addition, silica materials are also easy to find around, for example rice husks. Indonesia with a rice field area of around 7.46 million hectares is able to produce 65.75 million tons of rice husk waste every year. The results of research by [11] showed that rice husks contain very high silica, namely 93.46%.

All of these problems and potentials are the background for building a business under the name Silina Company, a business with an innovative granule-shaped organic fertilizer product produced through the use of the sol-gel method [12] as the main ingredient of the product is synthesized from rice husk ash using a sol-gel method that is effective in producing silica at an optimal pH.

Business feasibility studies are essential in starting a business, including ensuring that the services or opportunities offered are in line with sharia principles as per the teachings of the Qur'an and Hadith [13]. In this context, a business feasibility study in sharia review seeks to determine whether the business idea is permissible under Islamic law, taking into account the benefits that outweigh the negative impacts. One of the methods used is Social Cost-Benefit Analysis (SCBA), which evaluates costs and benefits, including environmental aspects to ensure the sustainability of the

project [14]. This study will be applied to Silina Co., an environmentally friendly organic fertilizer business, to evaluate its business feasibility using the SCBA approach, so that it can be confirmed that the business complies with sharia principles and is feasible to run.

2 Literature Review

2.1 Stewardship Theory

Stewardship theory or management theory is a theory related to the responsibility of managers in managing organizational resources effectively and efficiently to achieve the company's long-term goals [15]. This theory focuses on management principles that are responsible for the management of existing organizational resources, including human, financial, and natural resources used by the company [16].

According to Stewardship theory, management is considered trustworthy to act in the best interest of the public and shareholders. In this theory, managers will behave in the common interest, and will cooperate with owners rather than oppose them if their interests are not the same [17]. This is because managers who act as *stewards* are more concerned about the common interest and choose to act in accordance with the interests of the owner in an effort to achieve organizational goals. *Stewardship* theory also assumes a close relationship between organizational success and owner satisfaction. *Stewards* will try to protect and maximize organizational wealth with company performance, so that the utility function will be maximized.

2.2 Sharia Business Feasibility Study

Islamic business feasibility study is a scientific analysis of the feasibility (acceptance) or unsuitability (rejection) of a business plan defined as halal according to Islamic law in a company's investment plan. Studying the feasibility of a legitimate business is a form of asking for Allah's help and compassion so that the business can produce tangible benefits in the community. Therefore, running a business requires a Shariah feasibility study to conduct a thorough analysis used to ensure that the business or project is based on Islamic Shariah.

According to Kesmir and Jakfar, there are at least five reasons for conducting a feasibility study before starting a business or project, namely: avoid the risk of loss, facilitate planning and facilitate implementation, to work Ease of supervision and convenience in supervision. Although there is an element of effort to achieve the success of efforts to explore the feasibility of a legitimate business so that further work is successful and blessed by Allah SWT, prayer is the most important thing that God wants, so the work is carried out, so that it is facilitated in its implementation.

2.3 Social Cost-Benefit Analysis (SCBA)

Economic feasibility is defined as the feasibility for all parties who benefit, either directly or indirectly from a development or business development. In relation to economic analysis, the benefits obtained should be greater than the costs incurred. In looking at the economic feasibility of a product, the Social cost-benefit analysis method can be used.

In this study, we refer to the *cost and benefit analysis* model developed by Jorge & de Rus. The model is used to evaluate the feasibility of an investment in airport infrastructure development. This method uses the calculation of *Consumer Surplus* and *Producer Surplus* aspects. The researcher tried to develop the CBA model built by Jorge & de Rus on 2004 by adding the calculation of benefits in the environmental aspect or *Enviromental Surplus* [18].

3 Research Method

This research uses descriptive qualitative research methods used to answer problems by collecting narrative data from observations, documents, and other data sources, and utilizing existing theories [19]. The data collected is descriptive data so no hypothesis testing is required. Researchers used the SCBA approach by referring to the main focus of the research.

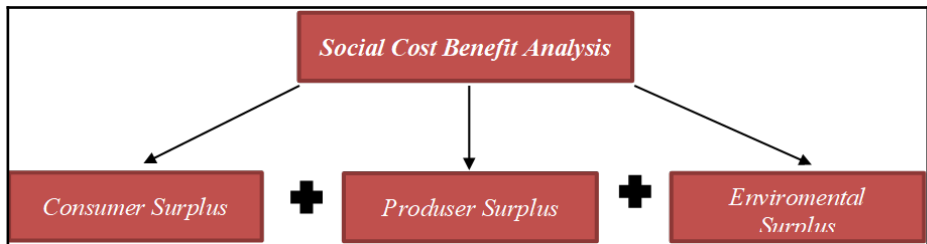


Fig. 1. Secondary Data

Source: Secondary data Processed

This research technique or data collection is carried out from various settings, sources and methods or techniques. Judging from the setting, the data is collected in a scientific setting (natural setting), judging from the source, the data is collected with secondary data. The data analysis process in this study includes collecting data related to Silina Co.'s business, such as financial, environmental, social, and sharia data. After that, the data is processed to produce accurate information. Analysis was conducted using SWOT, feasibility analysis, followed by social and environmental impact assessment. Furthermore, a Social Cost-Benefit Analysis (SCBA) calculation was conducted to compare the costs and benefits of this environmentally friendly organic fertilizer business activity. Finally, conclusions and recommendations cover

aspects of business sustainability, risk management, product development, and appropriate marketing strategies.

4 **Result and Discussion**

4.1 **Sharia Review Analysis of Silina Company**

In the aspect of the application of sharia values, Silina products will be analyzed based on the fulfillment of the pillars and conditions in accordance with sharia starting from the form of business cooperation (Shirkah), business management and contracts used. Silina product is one of the fertilizer products produced which is built on the basis of sharia. The form of business cooperation (Syirkah) used between fellow owners is Syirkah 'inan, which is a form of cooperation between two or more parties, each of which provides capital and energy with profit sharing For the implementation of Silina fertilizer on the rehabilitation of farmers' agricultural land, we open opportunities for farmers who want to become fostered partners through professionally arranged contracts or contracts, fostered partner farmers are free to determine the varieties of plants they will develop and we will facilitate with fertilizer with a post-harvest profit sharing payment method according to the terms of the contract.

All transactions and economic activities are based on the four pillars used, namely tawhid, fairness, free will, and accountability. In addition, there are several principles used, namely based on mutual consent, justice, prohibition of usury, compassion, avoiding gharar transactions, not neglecting worship, and all transactions are recorded.

The main foundation of this business is the Qur'an and As-sunnah, for which several contracts are used in buying and selling in accordance with muamalah fiqh. Among them, the contract between the owner and the buyer is a murabahah contract, the contract between the owners is a Mudharabah contract. The work environment is conducive and upholds the principles of sharia. This business uses halal sources of financing without elements of usury and maisir in it. Based on some of the findings above, it can be concluded that Silina Company fulfills the elements and requirements of a sharia business.

4.2 **SWOT Analysis of Silina Company**

The following is a SWOT analysis for Silina Co. as an Eco-Friendly Organic Fertilizer Business in South Sulawesi that uses rice husk waste as its base material:

Table 1. Swot Analysis Matrix

Strength	Weaknesses
1) Raw materials are cheap and easy to find in the South Sulawesi region.	1) Lack of promotion and marketing so that it is not widely known by consumers.

- | | |
|---|---|
| 2) Environmentally friendly products and meet the increasing consumer demand for organic products.
3) Large market potential because the need for organic fertilizer is increasing in Indonesia.
4) Easy production process and can be done with simple technology. | 2) Production capacity is still limited, making it difficult to meet increasing demand.
3) Lack of experienced human resources and experts in organic fertilizer production. |
|---|---|

Opportunity

- 1) Increased consumer awareness of the importance of environmentally friendly products.
- 2) Government support to increase the production and use of organic fertilizers.
- 3) Potential to cooperate with local farmers and government agencies in programs to increase the production and use of organic fertilizers.
- 4) Potential to expand the market outside South Sulawesi.

Threat

- 1) Competition from other organic fertilizer producers that are better known and already have a large market.
- 2) Changes in government policies that affect the production and use of organic fertilizers.
- 3) Raw materials that become increasingly difficult to obtain in the future.
- 4) Changes in consumer trends towards the use of chemical fertilizers rather than organic.

Source: Primary data processed by researches

4.3 Economic Feasibility Analysis of Silina Company Using Social Cost Benefit Analysis (SCBA)

Consumer Surplus

Consumer surplus is the net benefit that consumers realize when they can afford to buy the good at the equilibrium price. In a graph, it is equivalent to the difference between the maximum price consumers are willing to pay and the price they actually pay for the unit of goods purchased [20]. In measuring the amount of consumer surplus from Silina products, calculations are made using the following equation (assuming per month):

$$\begin{aligned}
 CS &= (Q \times P_{\text{komp}}) - (Q \times P_{\text{Silina}}) \\
 &= Q \times (P_{\text{komp}} - P_{\text{Silina}})
 \end{aligned}
 \tag{1}$$

Description:

Q = Quantity of Silina fertilizer needed by consumers every month

P_{komp} = Competitor fertilizer price

P_{Silina} = Silina fertilizer product price

Based on this definition, researchers tried to calculate consumer surplus by comparing competitor prices with Silina product prices. The difference represents the willingness to pay by consumers for competitor products that can be saved due to the more economical price of Silina products.

Table 2. Consumer Surplus

No.	Competitor Product Name	Price for 25 kg
1	KUPUPUK biomass compost organic fertilizer (25 kg packaging)	IDR 125,000
2	Solid organic fertilizer (25 kg packaging)	IDR 125,000
3	Organic cow manure (25 kg packaging)	IDR 182,500
4	Organic fertilizer for planting media (25 kg packaging)	IDR 250,000
Average price		IDR 170,625

Source: Primary data processed by researches

According to data from the Badan Pusat Statistik , 30% of the dry land area in South Sulawesi is acid soil, which is around 693,650 ha. With an estimated Silina fertilizer requirement for 1 hectare of land is 300 kg for one planting period. Therefore, the need for Silina fertilizer is 208,095 tons per year (300 kg × 693,650 ha). Assuming that the potential market for farmers that can be capitalized by fertilizer businesses is 5%, the monthly demand for silica fertilizer in South Sulawesi is 10,405 tons. From the amount of this need, about 0.06% can be capitalized by Silina fertilizer products or about 7 tons / year. Thus, the amount of consumer surplus from Silina fertilizer products can be calculated as follows:

$$\begin{aligned} Q &= 1200 \text{ pcs (Size 25kg)} \\ P_{komp} &= \text{IDR } 170,625 \\ P_{silina} &= \text{IDR } 100,000 \\ CS &= Q \times (P_{komp} - P_{silina}) \\ CS &= 1200 \text{ pcs} \times (\text{IDR } 170,625 - \text{IDR } 100,000) \\ CS &= \text{IDR } 84,750,000/\text{year} \end{aligned}$$

Based on the above calculation, a consumer surplus of Rp84,750,000/year is obtained as an additional welfare value felt by consumers after switching to choose Silina fertilizer products. This amount indicates a relatively large value considering that the acidic land which is also the share of market for this product is also quite large.

Producer Surplus

Producer surplus is a measure of producer welfare, which is the profit that producers make when they can sell goods for more than the lowest price they are willing to accept. Producer surplus includes the profit gained from trading activities and also the efficiency generated from the product process. In measuring the amount of producer surplus from Silina fertilizer products, calculations are made using the following equation (assuming per month):

$$PS = TR_{Silina} - TC_{Silina} \quad (2)$$

Description:

TR_{Silina} = Sales earned by Silina fertilizer products

TC_{Silina} = total cost of Silina fertilizer products

Based on this definition, researchers try to calculate producer surplus by looking at the profit obtained by Silina fertilizer products with the total expenditure required in producing Silina fertilizer products. Based on the estimated results of the calculation of the budget plan and production costs of Silina products, it costs Rp9,896,000 with monthly sales of Rp24,000,000, then the amount of producer surplus from Silina products can be calculated as follows:

TR_{silina} = IDR10,750,000

TC_{silina} = IDR6,500,000

PS = $TR_{silina} - TC_{silina}$

PS = IDR10,750,000 - IDR6,500,000

PS = IDR4,250,000/month

PS = IDR51,000,000/year (IDR4.250.000/month $\times$ 12 month)

Based on the above calculations, a producer surplus of Rp51,000,000/year was obtained by Silina fertilizer producers. This amount indicates a relatively large value, considering that the acidic land which is also the share of market for this product is also quite large.

Environmental Surplus

Environmental surplus is a positive contribution or benefit of the existence of Silina fertilizer products felt by third parties for transactions that occur (Davidson & Spong, 2020). In calculating this environmental surplus, researchers use the concept of positive externalities. In this study, researchers tried to evaluate the economic value of environmental improvements as a result of Silina fertilizer production.

The raw materials used in Silina products are livestock manure waste, rice husk waste and vines. These three types of waste are waste that if not utilized properly will have a polluting effect on the environment such as methane gas which affects the greenhouse gas effect. In Hotler's research (1997), the value of 1 kg of livestock manure waste can produce 37-170 ml of methane gas. The valuation value of environmental improvements provided by Silina fertilizer, using the basic price of methane gas is USD 2900 per ton. So that the ES value that can be provided by Silina is worth IDR 30,917,325.6/year.

Referring to the three aspects above, it can be concluded that the Silina fertilizer product business is feasible to run with the results of the SCBA calculation.

CS = IDR84,750,000/year
PS = IDR51,000,000/year
ES = IDR30,917,325.6/year

Table 3. Environmental Surplus

	Estimati on	PV-1	PV-2	PV-3	PV-4	PV-5	Total
C	IDR	IDR	IDR	IDR	IDR	IDR	IDR
	84,750,00	84,74	84,74	84,74	84,74	84,74	508,499,20
S	0	9,947	9,893	9,840	9,787	9,734	1
P	IDR	IDR	IDR	IDR	IDR	IDR	IDR
	51,000,	50,99	50,99	50,99	50,99	50,99	305,999,51
S	000	9,968	9,936	9,904	9,872	9,840	9
E	IDR	IDR	IDR	IDR	IDR	IDR	IDR
	30,917,	30,91	30,91	30,91	30,91	30,91	185,503,66
S	325.60	7,306	7,287	7,267	7,248	7,228	2
							IDR
Total SCBA							1,000,002
							.382

Source: Primary data processed by researches

Based on the Social Cost-benefit Analysis, it can be concluded that the products of Silina Company are feasibly able to create economic, social and environmental welfare of IDR1,000,002,382 in the next 5 years.

5 Conclusion

Silina fertilizer is an organic fertilizer that has the ability to improve the physical, chemical, and biological structure of soil, with the sol-gel method used in the manufacturing process can increase the effectiveness of fertilizer by more than 25%. The most effective marketing strategy for this fertilizer is to form a network of farmer groups supported by word of mouth techniques through real testimonials from users. The high need and demand for organic fertilizers provides a great opportunity for Silina Fertilizer to compete in the national market. Based on the five findings of sharia compliance, Silina Company is declared to fulfill the elements and requirements as a business based on sharia principles. In addition, based on the Social Cost-Benefit Analysis, the products of Silina Company are feasibly assessed to be

able to create economic, social, and environmental welfare with a value of IDR1,000,002,382 within the next five years.

References

1. Zamzam, H. F., and Aravik, H. *Islamic Business Ethics The Art of Doing Business with Blessings*. Deepublish. 2020.
2. Sariagri. Sariagri. URL: <https://sariagri.id/article/amp/96875/72-persen-tanah-pertanian-di-indonesia-kini-sedang-sakit>. 2022.
3. Witro, D., and Rasidin, M. Tracing the existence of local wisdom values and character education in farming in koto padang village. *Journal of Culture*, 16(1), 1-8. 2021.
4. Prasetyawati, I. M. S. W. S. R. Heavy metal content of pb and cu in spinach plants and bioavailability in agricultural soil with NPK fertilizer application. *Cakra Kimia (Indonesian Journal Of Applied Chemistry)*, 8(2), 58-67. 2021.
5. Widyasari, N. L. Assessment of hyperaccumulative plants in heavy metal contaminated land remediation techniques. *Journal of Ecocentrism*, 1(1), 17-24. 2016.
6. Sariagri. Sariagri. URL: <https://sariagri.id/article/amp/96875/72-persen-tanah-pertanian-di-indonesia-kini-sedang-sakit>. 2022. Accessed on February 15, 2024.
7. Tzvetkova, P., dan Nickolov, R. Modified and unmodified silica gel used for heavy metal ions removal from aqueous solutions. *Journal of the University of Chemical Technology & Metallurgy*, 47(5), 498-504. 2012.
8. Singh, A. C. H. Preparation of amino-functionalized silica gel adsorbents for adsorption of heavy metal ions. *International Journal of Advances in Science Engineering and Technology*, 5(3), 63–67. 2017.
9. Evan, E., Pardoyo, P., and Darmawan, A. Preparation of nanosilica from rice husk ash at sol gel pH variation. *Greensphere: Journal of Environmental Chemistry*, 2(1), 8-13. 2022.
10. Siregar, A., and Annisa, W. Silica-based nutrient amelioration in swampland. *Journal of Land Resources*, 14(1), 37. 2020.
11. Dharmasika, I., Budiyanto, S., and Kusmiyati, F. Effect of doses of rice husk charcoal and cow manure on the growth and production of hybrid corn plants (*Zea Mays L.*) in soil salinity. *Journal of Research and Development of Central Java Province*, 17(2), 195-205. 2019.
12. Mamnuah, I. A., Darnosunarno, T. W., and Ismathuhom, F. Preparation of silica gel by utilizing a mixture of rice husk and sugarcane waste (*saccharum officinarum*) using the sol-gel method as an adsorbent. *Faculty Scientific Journal*, 2(1), 8-13. 2021.
13. Mongkito, A. W., Mahfudz, M., Putri, N. S. I., & Haana, H. P. Business Feasibility Study in Sharia Economic Perspective. *Medina: Journal of Islamic Studies*, 8(1), 96-106. 2021.
14. Sidhu, A. S., Pollitt, M. G., & Anaya, K. L. A social cost benefit analysis of grid-scale electrical energy storage projects: A case study. *Applied energy*, 212, 881-894. 2018.
15. Jefri, R. 018. Teori stewardship dan good governance. *Economics Bosowa*, 4(3), 14-28. 2018.
16. Mulyanti, D. Corporate financial management. *Akurat Jurnal Ilmiah Akuntansi FE UNIBBA*, 8(2), 62-71. 2017.
17. Schillemans, T., dan Bjørstrøm, K. H. Trust and verification: Balancing agency and stewardship theory in the governance of agencies. *International Public Management Journal*, 23(5), 650-676. 2020.
18. Jorge, J. D., & de Rus, G. Cost-benefit analysis of investments in airport infrastructure: a practical approach. *Journal of Air Transport Management*, 10(5), 311-326. 2004.
19. Ardyan, E., Boari, Y., Akhmad, A., Yuliyani, L., Hildawati, H., Suarni, A., & Judijanto, L. *Qualitative and Quantitative Research Methods: Qualitative and Quantitative Method Approaches in Various Fields*. Sonpedia Publishing Indonesia. 2023.
20. Henderson, A. Consumer's surplus and the compensating variation. *Review of Economic Studies*, 8(2), 117–121. 1941.

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