

Assessing the economic feasibility of cattle farm agritourism at ex-coal mine lands through the partnership program

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Abstract. Mukarrom F, Gravitiani E, Pranoto P, Karsidi R. 2022. *Assessing the economic feasibility of cattle farm agritourism at ex-coal mine lands through the partnership program. Biodiversitas 23: 1843-1851.* Extensive coal mining activities have various negative impacts on environment as well as on local communities living adjacent to the mining areas. Reclamation followed by revegetation using forage crops could significantly improve the value of the land. The forage crops produced from the reclaimed land can be integrated with developing cattle farm agritourism to obtain a win-win solution of environmental recovery by enhancing the socio-economic livelihood of local communities. Hence, this study aims to analyze the economic feasibility of developing cattle beef agritourism at ex-coal mine lands in South Sumatra, Indonesia, and assess its potential in increasing the effectiveness of partnership program funding. The analysis of feasibility criteria revealed a Net Present Value (NPV) of 129,152,169,746 IDR, meaning that the project is feasible to be implemented since the NPV is greater than 1. The Benefit-Cost Ratio (BCR) was 1.22, which is more than 1, implying that it is feasible to be run. The Payback Period (PP) was 3.5 years which is far shorter than the estimated investment period of 15 years. The Internal Rate of Return (IRR) was 35.6% which is much greater than the assumed annual interest rate of 8%. The farmers' plasma system analysis showed that the cattle farm agritourism could increase the amount of fund distribution, collectibility rate, and also farmer's income.

Keywords: Biodiversity, community development, cow farm tourism, ex-mining area utilization

INTRODUCTION

Indonesia has been among the biggest coal exporter countries since 2005 (Friederich and Leeuwen 2017). In 2020 alone, coal export volume from the country reached 341,548 million tons and was worth USD 14.534 billion (Statistics Indonesia 2022). On national scale, the coal mining sector plays an essential role in Indonesian economy and development. Gross Domestic Product (GDP) of Indonesia in 2021 reached IDR 16.97 quadrillion and the mining sector alone contributed IDR 1.52 quadrillion or equating to 8.98% of the total GDP (Statistics Indonesia 2022). At local and regional scales, mining industries in Indonesia contribute to community development of the adjacent operational field, primarily on skill and capacity building (Fordham et al. 2018).

Nowadays, there is a growing paradigm in the mining industries in which the business development is not only focusing on extracting natural resources to maximize profit but also conducting environmental conservation, improving the employees' capacity, and developing the community. The consideration of these aspects is a basic idea of so called Corporate Social Responsibility (CSR) (Popa 2015; Tang-Lee 2016). From the perspective of social aspect, the sustainability of big mining companies relies on the

implementation of CSR, especially on people living in their operational areas (Borgert et al. 2020; Wozniak and Jurczyk 2020). Community empowerment is an effort to empower people through learning so that they can manage and be responsible for development programs (Karsidi et al. 2020; Khairabadi et al. 2020). CSR in the mining industry is expected to strengthen the relationship between the company and the community, reinstate communication, and improve stakeholder care (Narula et al. 2017; Sgroi et al. 2018). In Indonesia, policies regarding CSR are enacted by the national government through the regulation of the Ministry of State-owned Enterprises PER-05/MBU/2007 concerning Community Development and Partnership Programs (Sisilia et al. 2015). The implementation of this policy by companies is to comply with Good Corporate Governance principles, yet in its implementation still requires a lot of improvement.

The Community Development and Partnership Programs have contributed to improving welfare and empowering local communities (Sisilia et al. 2014). Under the Community Development programs, fund distribution relatively goes well because the fund is aimed to provide social supports to the adjacent community in terms of health, education, and welfare (Rustinsyah 2019). Meanwhile, Partnership Program is focused on

empowering small and medium enterprises by giving soft loans as well as accompaniment (Sisilia et al. 2015; Rustinsyah 2019). Distribution of funds in the Partnership Program is mainly given to small enterprises which have outstanding local product commodities, export-oriented, involve a lot of manpower, and support the use of coal briquette (Bukit Asam 2017). Nonetheless, these requirements are not simply fulfilled by the small and medium entrepreneurs, resulting in very low fund distribution under the Partnership Programs.

Reports by a mining company operating in South Sumatra showed that a great amount of funds provided by the company under the Partnership Programs was not effectively absorbed by the small and medium enterprises around the mining company and all over the country (Bukit Asam 2014, 2015, 2016, 2017). The percentage of funds being absorbed varied, ranging from 1-72% despite the large amount of money allocated for this program, ranging from 40-144 billion Indonesian Rupiahs (IDR). For example, of the 62 billion IDR allocated for the Partnership Programs in 2016, only 1% was absorbed, or less than half billion IDR (Bukit Asam 2016). The low collectability rate further complicates such a problem.

There are various Partnership Programs that have been developed to improve the performance of small and medium enterprises. Small businesses that commonly receive the Partnership Program loan funds without any collateral include restaurants, retail clothing stores, welding workshops and grocery stores (Bukit Asam 2017). An alternative partnership model which suits for small and medium enterprises, and meets both big amounts and high rates of collectability is cow farm agritourism. A cow farm agritourism develops cow fattening within an agritourism object area. The reason for selecting cow farm agritourism as an alternative model under the Partnership Program is it combines cattle production and education program in which visitors can see, learn, and interact directly with the cattle (Greenwood 2021). The cattle production is promising since beef consumption worldwide is estimated to continue increasing until 2030 for approximately 1.3% per annum (Santos et al. 2021). Meat demand is also progressively increasing along with economic growth in Indonesia, in which its increment reaches 4.43% annually while the national production only increases 2.33% (Rustinsyah 2019; Ramadhan et al. 2021). In cattle beef farm agritourism, a group of farmers will only receive the margin of cow fattening since all the expenses and revenue generated in the farm production process will be handled by the farmer cooperative. The farmers' job is only to raise the number of cows allocated to them respectively. Besides incomes from the meat and dairy products, other benefits of the cattle farm agritourism can be generated from visitors' ticketing and shopping activities.

The availability of ex-coal mine lands which has undergone reclamation as a forage source, large capital fund, and human resources in managing agritourism are important factors in developing cattle farm enterprise. Cattle farm agritourism can be a center of beef cattle fattening by involving the surrounding community of the mining site, as they are in charge of running the business,

while the mining company serves as the capital provider. So far, a cattle farm is just a side job of farmers, but it functions as saving and they can sell the cattle whenever they suddenly need money. Since it is only a side job the expense of keeping the cattle is not well calculated. Some farmers select limousin beef cattle for fattening since it offers higher economic benefits, a short period of fattening, and the availability of feed sources (Aldai et al. 2012). This study aims to analyze the economic feasibility of developing cattle beef agritourism at ex-coal mine lands in South Sumatra, Indonesia and to assess its potential in increasing the effectiveness of Partnership Program funding.

MATERIALS AND METHODS

Study area

The study was conducted at an ex-coal mine lands in the Mine Banko Barat Pit 1 East Tanjung Enim, South Sumatra, Indonesia (Figure 1). Geographical location Mining Business Permit Area (WIUP) PT Bukit Asam Tbk. Unit Tanjung Enim Mining (PT.BA-UPTE) is located at 3°40'30" South Latitude -3°46'24.8" South Latitude and 103°44'18.4" East Longitude- 103°48'3.9" East Longitude with Mining Business Permit Area (WIUP) owned by PTBA-UPTE covering an area of 40,700 ha which includes the Tanjung Enim and surrounding areas which consists of Air Laya (TAL) and Non-Air Laya Area (Amriansyah and Sihombing 2021; Kodir et al. 2017).

Data collection procedure

We conducted a quantitative study by calculating parameters related to financial aspects. The data relating to material prices, costs and salaries were obtained through interviews and other available sources. The parameters of expense/cost were generated from land preparation to construction stage as well as operation which were then used as subtractors from parameters of income in order to obtain value used for assessing project feasibility.

Identification of cost/expense

Cost is all efforts to achieve the prescribed goal measured in monetary values. Based on its utilization, it comprises three types of cost. First, the investment cost is the expenditure required to prepare all the needs in order to operate well, such as legal permit cost, land preparation, building construction, any required site work infrastructures, and other facilities including development and improvement of human resources. Second, operational cost is the expenses for operating the business according to the goals. It consists of operational and routine maintenance costs. Routine maintenance cost is the cost for keeping the performance of facilities and equipment in good working condition consisting of preventive and curative maintenance costs. Third, periodical maintenance cost is the cost of repairing cowshed, equipment, and tourist support facilities that are damaged after being used for an average of 5 years (Giap et al. 2022).

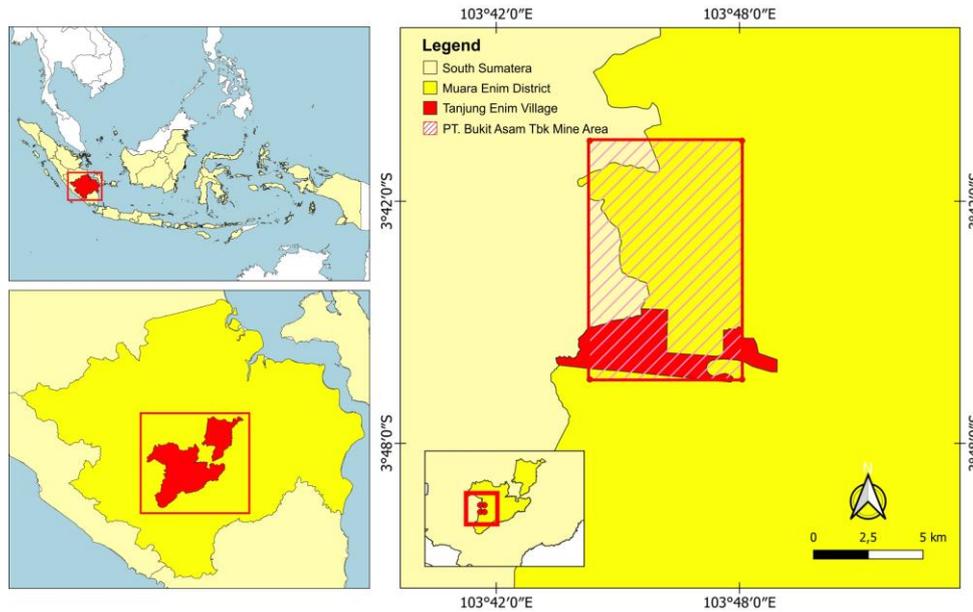


Figure 1. Map of study area in PT. Bukit Asam Tbk., Tanjung Enim Mine Area, South Sumatra, Indonesia (Kodir et al. 2017)

Identification of income/benefit

Revenue from cattle agritourism is expected to obtain from ticket sales, rental of souvenir shops and food courts, and sales of cows (Cunha and Ribeiro 2022).

Data analysis

Economic feasibility of the cattle agritourism will be defined using benefit cost analysis. The methods carried out in the study are as follows:

Net Present Value (NPV)

This is based on the concept of discounting all cash flow over project life period to the current value, followed by calculating the net value then we found the difference, which is the current value. It means two factors perceived simultaneously, they were time value of money and amount of cash inflows as well as outflows. The investment flow reviewed were initial expenditure, operational cost, and maintenance expense (Peymankar et al. 2021), as follows:

$$NPV = \sum_{t=0}^n \frac{(C)t}{(1+i)^t} - \sum_{t=0}^n \frac{(CO)t}{(1+i)^t}$$

- NPV : net present value
- (C)t : cash inflow in year t (CO)
- (CO)t: cash outflow in year t
- I : the relevant discount rate used to obtain NPV
- n : project technical life
- t : time

Indication :

Analyzing economic feasibility project using NPV method will lead to indication are as follows:

- NPV = positive, the project proposal can be accepted, the higher NPV the better the project is.
- NPV = negative, the project proposal is refused
- NPV = 0, it means normal

Internal Rate of Return (IRR)

It is a cash flow producing cash inflow NPV equals cash outflow NPV. First determine the discount rate in NPV analysis, then calculate the NPV from cash outflows and inflows. IRR analysis can be done using the following equitation formula (Mellichamp 2017) :

$$\sum_{t=0}^n \frac{(C)t}{(1+i)^t} - (Cf) = 0$$

Indication:

- IRR > intended return flow (i), the project is accepted.
- IRR < intended return flow (i), the project is refused.

Benefit-Cost Ratio (BCR)

Benefit-Cost Ratio is often used for evaluating public sector projects. It emphasizes its benefit for public not for company financial interest. However, it does not imply that private corporations neglect this criterion (Frej et al. 2021) with the formula as follows:

$$BCR = \frac{(PV)B}{(PV)C}$$

$$\frac{(PV)B}{cf}$$

- BCR = the ratio of benefit to cost
- (PV) B = present value benefit
- (PV) C = present value cost

Indication:

- BCR > 1: project proposal is accepted
- BCR < 1: project proposal is refused
- BCR = 1: Neutral

Payback Period (PP)

This analysis aims to find out the length of time required for an investment to recover its initial outlay when break event point (BEP) occurs. The length of period (k) at breakeven point (Barletta et al. 2018) is:

$$k_{(PP)} = \sum_{t=0}^k CF_t \geq 0$$

K = payback period

CF_t = cash flow period to t

If the cash flow benefit and its cost are annual, thus the formula becomes:

$$k_{(PP)} = \frac{\text{Investment cost}}{\text{Annual benefit}} \times \text{time period}$$

Indication:

The investment plan is feasible if $k < n$, and vice versa

K = the total of payback period

n = investment life

RESULTS AND DISCUSSION

Cost analysis

Cost is a principal component of an investment and it requires prudent calculation during the planning stage. The cost plan can be done with detailed calculation or by taking comparative data from other available sources (Frej et al. 2021). In this study, all the expenditures were from the mining company without loan from bank.

Initial investment

The initial investment of cattle farm agritourism comprises: (i) expenditures for preparation such as obtaining business permits and developing master/business

plan with total amount of IDR 1,549,500,000; (ii) construction cost including land preparation, building a cowshed and purchasing farm machinery with total expense of IDR 23,325,000,000; (iii) building tourism facilities, i.e., food court, park, and souvenir shop with total of IDR 6,600,000,000. Thus the total initial investment for cattle farm agritourism is estimated at IDR 34,467,000,000 (Table 1).

Operational and routine maintenance costs

The operational cost includes expenses for promotion, stationery, electricity, cattle feed and salaries. Meanwhile, routine maintenance cost are for cowshed, equipment, and tourism facilities (Table 2).

Periodic maintenance cost

The expenditure is for repairing the cowshed, i.e., the roof, the corrosive parts, and hydrants. It also includes the cost of renovation of food court and other tourism supporting facilities (Table 3).

The calculation of the initial investment costs for the development of cattle farm ecotourism is IDR 34,467,000,000. Operational and routine maintenance costs are IDR 46,793,725,000 per year, and periodic maintenance costs are IDR 1,645,875,000 per five years. Operational cost, routine and periodic maintenance costs increase 5% per year. Based on an 8% interest rate, the plan for developing cattle farming agritourism on ex-coal mine lands may result in a present value of operational and routine maintenance costs of IDR 537,554,786,824 and periodic maintenance costs of IDR 3,041,170,825.

Benefit analysis

The incomes of agritourism and limousin cattle fattening are expected from the visitors' tickets, rentals of souvenir shop and food court, and cattle sale.

Table 1. Initial investment for cattle farm agritourism in ex-mining land

Description	Volume	Unit	Unit price (IDR)	Total price (IDR)
Preparation cost				
Legal permit	1	LS	150,000,000	150,000,000
Planning cost	6%	LS	22,825,000,000	1,369,500,000
Sub total				1,519,500,000
Construction cost				
Cut and fill soil	70,000	m ³	130,000	9,100,000,000
Gate work	1	unit	1,500,000,000	2,000,000,000
Cowshed building	1	IDR/cow	8,000,000	12,000,000,000
Cowshed equipment	1,500	unit	150,000	225,000,000
Sub total				23,325,000,000
Tourist facilities				
Food court	3	unit	1,200,000,000	3,000,000,000
Garden	1	unit	3,000,000,000	1,500,000,000
Souvenir shop	7	unit	200,000,000	2,100,000,000
Sub total				6,600,000,000
Amount				31,444,500,000
Value added tax	10%			3,144,450,000
Total amount				34,467,000,000

Table 2. Operational and routine maintenance costs for cattle farm agritourism in ex-mining land

Description	Unit	Number of units	Unit price (IDR)	Total price per year (IDR)
Operational cost				
Calf purchasing	Cows/year	1,500	22,000,000	33,000,000,000
Salaries	People/year	61		1,746,000,000
Promotion	LS	1	500,000,000	500,000,000
Calf feed & medicine				6,952,500,000
Cows transport	ST/year	3,000	125,400	752,400,000
Electrical	ST/year	3,000	18,000	54,000,000
Stationery	LS	LS	15,000,000	15,000,000
Others	LS	LS	20,000,000	20,000,000
Sub amount				42,240,500,000
Routine maintenance cost				
Routine cowshed maintenance	%	1	29,325,000,000	233,250,000
Routine tourist facilities maintenance	%	1	8,000,000,000	66,000,000
Sub amount				42,539,750,000
Value Added Tax (10%)				4,253,975,000
Total Amount				46,793,725,000

Table 3. Periodic maintenance cost for cattle farm agritourism in ex-mining land

Description	Unit	Numbers	Unit price (IDR)	Amount (IDR)
Periodic Maintenance Cost				
Cowshed and equipment	%	5	23,325,000,000	1,166,250,000
Tourist facilities	%	5	6,600,000,000	330,000,000
Amount				1,496,250,000
Added Value Tax (10%)				149,625,000
Total Amount				1,645,875,000

Cattle sale income

Besides being an agritourism site, the cattle farm is also planned for limousin beef cattle fattening. It is planned 750 limousin cows undergoing fattening per period (180 days) or 1,500 cows per year. The projected mean sale price is IDR 33,500,000 per cow, hence the first-year sale value can reach IDR 49,500,000,000. It is projected that the income of cattle sales increases 6.5% annually. The present value of cattle sales is projected to be IDR 624,515,591,543.

Ticket and package sale income

This cattle farm agritourism will be designed and planned to accommodate visitors coming from all over the South Sumatera Province. The amount of visitors was estimated using Tourism Participation Index (TPI). TPI is the ratio between number of visitors with population of the destination area (Damanik and Purba 2020).

The population of Muara Enim in 2018 was 627,818 (Statistics Indonesia 2022) and the TPI of Muara Enim was got from the average TPI of the similar ecotourism object as shown in Table 4. It was projected that 65,000 people would visit this cattle farm agritourism in the first year with the mean increase of South Sumatera tourism visitor of 10% every year (Table 5) (Statistics Indonesia 2022).

Determination of package price refers to the similar tourism object in province of South Sumatera, Lampung, East and West Java as shown in Table 4.

Based on the marketing strategies in many theme parks, we develop ticket sales by selling each attraction separately or selling as a package as provided in Table 6.

In this study, it is assumed that all 65,000 visitors would buy tickets in package, so that each person will pay 80,000 rupiahs. Then the income in first year is IDR 5,200,000,000. Ticket prices are projected to increase by 10% per year. The calculation of the present value of ticket sales on cattle farm agritourism is IDR 75,256,295,827.

Rental income of supporting tourism facility

Developing cattle farm agritourism equipped with supporting tourism facilities can enhance its attractiveness and visitor's comfort. These facilities include toilet, food court, and souvenir shop in which their operations are delegated to society by paying rent to the management of cattle farm agritourism (Table 7).

Rental income from supporting facilities is projected to increase by 10% per year during agritourism operations. The present value of rental income for tourism supporting facilities in the form of food courts and souvenir shops is IDR 4,443,240,025 (Table 8)

Details of the Present value of income and expenditure of cattle farming agritourism are summarized in Table 9.

Table 4. Similar tourism object with similar characteristics with cattle farm agritourism

Tourism object	Location	Package price	Visitors	Population
Amanzi Waterpark	Palembang	IDR 100,000	130,165	1,686,092
Lembah Hijau	Bandar Lampung	IDR 145,000	95,980	1,166,000
Komodo National Park	West Manggarai	-	45,630	312,855
Cimory Prigen	Malang, East Java	IDR 95,000	135,522	1,592,000
Cimory Puncak	Bogor, West Java	IDR 85,000	135325	1,097,000

Table 5. Projected visitors of a cattle farm agritourism in ex-mining land

Year	Number of visitors
1	65,000
2	71,500
3	78,650
4	86,515
5	95,167
6	104,683
8	115,151
9	126,667
10	139,333
11	153,267
12	168,593
13	185,453
14	203,998
15	224,398

Table 6. Ticket and package prices of a cattle farm agritourism in ex-mining land

Description	Prices
Ticket sales	
Entrance ticket	20,000
Little cows farm	30,000
Milking cow	20,000
Playground	20,000
Riding a cow	25,000
Total amount	115,000
Package sales	
All round ticket	80,000
Amount	80,000

Table 7. Supporting facilities or rental prices of a cattle farm agritourism in ex-mining land

Description	Numbers of unit	Rental price (IDR)	Amount (IDR)
Rental income			
Food court	6	30,000,000	180,000,000
Souvenir shop	7	15,000,000	105,000,000
Total amount			285,000,000

Economic feasibility analysis

The economic feasibility analysis was conducted in this study to determine whether the investment of a cattle farm agritourism in ex-mining land with the expected operational timeframe of 15 years would be able to give both financial and economic benefits. This study used analysis of feasibility indicators, such as Net Present Value, Benefit-Cost Ratio, Payback Period, and Internal Rate of Return.

Table 8. Projected value of supporting facilities of a cattle farm agritourism in ex-mining land

Year	Rental price (IDR)	Discount Factor	Present Value (IDR)
0	0	1	0
1	285,000,000	0.9259	263,881,500
2	313,500,000	0.8573	268,763,550
3	344,850,000	0.7938	273,741,930
4	379,335,000	0.7350	278,811,225
5	417,268,500	0.6806	283,992,941
6	458,995,350	0.6302	289,258,870
7	504,894,885	0.5835	294,606,165
8	555,384,374	0.5403	300,074,177
9	610,922,811	0.5002	305,583,590
10	672,015,092	0.4632	311,277,391
11	739,216,601	0.3971	293,542,912
12	813,138,261	0.3677	298,990,939
13	894,452,087	0.3405	304,560,936
14	983,897,296	0.3405	335,017,029
15	1,082,287,026	0.3152	341,136,871
Total amount			4,443,240,025

Table 9. Projected values of income and expenditure of a cattle farm agritourism in ex-mining land

Description	Present value (IDR)
Present value of income	
Supporting facilities rental	4,443,240,025
Ticket and package sales	75,256,295,827
Cattle sales	624,515,591,543
Amount	704,215,127,395
Present value of expenditure	
Initial investment	34,467,000,000
Periodic maintenance cost	3,041,170,825
Operational and routine maintenance costs	537,554,786,824
Amount	575,062,957,649

Net Present Value (NPV)

Based on the calculation of revenue and cost present value of the cattle farm agritourism, as shown in Table 9 we got the result of NPV is IDR 129,152,169,746. Since the NPV is positive (much more than IDR 0), it means that the project is feasible to be run.

Payback period

The cattle farm agritourism project life is determined for 15 years. The payback period is acceptable if the value is smaller or does not exceed the specified maximum time limit. If the investment payback period exceeds the maximum limit, then it should be declared not feasible. The

calculation showed that the cattle farm agritourism project can achieve the break-even point in 3.51 years. This is shorter than the time limit of 15 years.

Benefit-Cost Ratio

The benefit is the total revenue of cattle farming agritourism after its operation for the 15 years which has been converted to the projected value. Meanwhile, the cost value means the total cost. The calculation showed the Benefit-Cost Ratio value was 1.22 and it is greater than 1, so the cattle farming agritourism project is feasible to be run.

Internal Rate of Return

This method is used to determine the project's rate of return and equalize the value of all cash inflows and outflows. Based on the calculation within the projected investment period, the IRR is 35.56% which is much greater than the minimum rate of 8%.

Impact analysis of cattle agritourism on society

Social benefit

Developing cattle farm agritourism on ex-coal mine lands of a coal mining company in South Sumatra, Indonesia is projected to deliver various benefits in terms of social, economic, environment and education (Choo and Petrick 2014). The purpose of developing the cattle farming agritourism is to achieve a balance of economic growth and income of the community with the value of services to tourists as well as increasing environmental conservation and preserving various cultures (Choo and Petrick 2014; Sgroi et al. 2018; Khairabadi et al. 2020; Dominati et al. 2021). Most of the farmers raise their cattle as their side job. The average ability of farmers to raise cattle is 4.3 heads with an additional income of IDR 714,934 per month, so that each farmer gets an additional income of IDR 3,074,216 monthly (Indrayani and Andri 2018).

Developing cattle farm agritourism on ex-mine coal lands will promote involvement and synergy of all stakeholders to integrate tourism object management (Sgroi et al. 2018; Angerer et al. 2021; Khairabadi et al. 2020). The stakeholders are involved in building adequate human resource capacity both in giving service to tourists and managing the tourism object (Petroman et al. 2016). According to Samarkoon and Parinduri (2015), education and training in management given by the company to the community for improving the quality of product and service will be very beneficial in delivering service to tourists from various backgrounds. The community will get the introduction of quality standards and service quality for the continuous project of agritourism (Choo and Petrick 2014).

Attempts on improving community development related to agritourism management can create good conduct, such as honesty and professional behavior, and prevent fraudulent behaviors, such as conning, stealing, and other bad behavior toward tourists (Choo and Petrick 2014; Li and Li 2021). Cooperation among communities in providing products and services is expected to be able to reduce potential conflict in the community. Fair and

equitable job distribution and business opportunities for the local community surrounding the agritourism area are pivotal factor to realizing this long-lasting project.

Economic benefit

The benefit of developing cattle farm agritourism in which the management is delegated to the community will improve the well-being and standard of living (Petroman et al. 2016; Khairabadi et al. 2020; Montefrio and Sin 2021). Employee recruitment and company partnership in the management of cattle farm agritourism also produce significant economic impact (Sgroi et al. 2018; Khairabadi et al. 2020). The company as an owner as well as the organizer of tourism objects does not manage all supporting facilities, and only provides the land and infrastructures, meanwhile, all the management is entrusted to the local community in the form of rent.

The business opportunities around the area of agritourism are intended to fulfill the needs of tourists, including restaurant, accommodation, souvenir shops, etc. Local food home industries and various handicrafts made by the local people are predicted to increase. Beef cattle fattening management can involve dozens of farmers and farm suppliers like concentrate food, fermented food, and drugs. Cattle food industry such as concentrate, fermented food, and probiotics is projected to develop around the agritourism site as well. The availability of extensive ex-coal mine lands and adequate financial capability of the coal mining companies are the main reason to develop a center of beef cattle breeder, cattle food industry, and beef industry on a large scale.

Agritourism analysis on partnership program fund distribution

The activity of beef cattle fattening can be done by some small farmers that join in farmer cooperative, collaborate with big farm company, and are coordinated by the mining company. Farmers who work together in farmer cooperative and agritourism management will receive partnership program funds as an investment and work capital for beef cattle fattening activity.

Analysis on partnership program fund beneficiary

Cattle farmers planned to join in cattle management of the agritourism are local people who live around and are directly affected by coal mining operations. These farmers must have experience in farming. Economic constrain and low education background result in these farmers' lack of options in earning money. Physical effects of coal mining activity, i.e., high-intensity dust and lack of groundwater debt also worsen their life by declining health levels. Local people with limited economy and low education sometimes have a misunderstanding on partnership program funds in which they thought the grant does not need to be returned. They are also easily provoked to use the fund for unproductive needs. Therefore, a system of regulating this fund is required in order to avoid that risk.

Cattle farm beef fattening integrated within an agritourism area is expected to improve knowledge of the farmers in managing farm production and tourism objects.

Various training regarding cattle farm production and tourism management will be provided. Besides taking care of cattle in agritourism sites, the farmers are still able to do their own activities, i.e., farming on their own lands. Through farming activity in agritourism sites run with modern management and well-ordered finance, the income enhancement of these small farmers can be accurately projected.

Partnership program fund distribution analysis

Plasma system in which all the cost of purchasing calf, cow feed, cow treatment, cow medication, and others are not given directly to the farmers but organized by the cooperative. In other words, all the expenditures and benefits of cattle farms are managed by the cooperative. The farmers only receive the remaining benefit from the selling income deducted by the total cost.

Farm activity integrated within agritourism can reduce the risk of failed partnership program funds. Installment payment done by farmer cooperative under the coordination of coal mining company results in better collectibility level (Mettauer et al. 2021). Non-perform loan of the Partnership Program funding is expected to reduce significantly. Plasma systems applied on cattle farms integrated with agritourism makes mining company easier to distribute partnership program funds, and the risk of bad credit performance can be minimized. This will increase the amount of distributed funds and improve company performance in handling corporate social responsibility.

In conclusion, the plan of developing cattle farm ecotourism is economically and financially feasible. Economic and financial feasibility analyses using NPV, IRR, PP, and B/C revealed that the project is feasible to be carried out. The biggest benefit from the development of cattle farm agritourism for the community is the income from selling cattle in which the management is planned to be done by the community/farmers. Another benefit of cattle farm agritourism for the community is the local people surrounding the agritourism site can open small businesses on fermented cattle food production, fertilizer production made of solid as well as liquid waste from cattle's dung and urine, and other job opportunities. The plan of progressive agritourism development at ex-coal mine lands can increase the distribution amount of State-Owned Enterprises (BUMN) partnership program fund, especially from coal mining enterprises. A plasma farmer system in which the farmers only receive cash from the benefit of beef cattle fattening will lower the risk of bad credit performance.

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