

ANALYSIS OF FEASIBILITY OF DEVELOPMENT OF AGROPOLITAN AREA PROBOLINGGO DISTRICT

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Abstract: This research was conducted in Probolinggo district, East Java Province, Indonesia. The research objective was to analyze the feasibility of developing an agropolitan area from the financial and infrastructure aspects. The analytical methods used are: Revenue Cost Ratio analysis; Payback Period (PP); Net Present Value (NPV); Internal Rate of Return (IRR). The results showed that the development of the farmer's market, namely the development of the Krucil fruit and vegetable market, the construction of a flat storage market and the development of the leaning agribusiness sub-terminal, and infrastructure are very feasible to build in the context of developing an agropolitan area and need to be continued in the Detail Engineering Design (DED).

Keywords: *study, analysis, feasibility, development, kawasa.*

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INTRODUCTION

Agropolitan (Agro = Agriculture; Politan = City) is an agricultural city that grows and develops which is able to spur the development of agribusiness systems and businesses so that it can serve, encourage, attract, promote agricultural development activities (agribusiness) in the surrounding area. (Margolang, 2018).

The development of an agropolitan area aims to increase the income and welfare of the community by accelerating regional development and increasing the bond between villages and cities. This can be realized through the development of competitive, community-based, sustainable and decentralized agribusiness systems and businesses in agropolitan areas (Bachrein, 2003); (Ikbal 2016)

The development of an agropolitan area in Probolinggo district to fully utilize local potential is an agropolitan concept that strongly supports the protection and development of local socio-culture. In accordance with the Spatial Plan of Probolinggo Regency, the development of an agropolitan area must support the development of

a mainstay area. Therefore, its development cannot be separated from the development of a system of activity centers at the National and East Java Province levels (Endang, Sa'id, & Munandar, 2009).

Meanwhile, the condition of the Probolinggo district is very possible for the development of an agropolitan area. The condition in question is the availability of agricultural land, and cheap labor, most of the farmers also have the skills and knowledge in farming which are supported by the existence of upstream and downstream sector networks and institutional readiness. (Fitriani, 2015).

Probolinggo district has compiled a master plan for the development of an agropolitan area by determining the superior product in 2016. As a continuation of the master plan for the agropolitan area, it is compiling activities on a feasibility study for the development of the agropolitan area (Murty, Domai, & Riyanto, 2016).

In the research on the feasibility of developing the agropolitated area of Probolinggo

district in 2020, more emphasis is placed on the results of the recommendations for the preparation of the 2017-2026 Agropolitan Area Development Master Plan for Probolinggo Regency, namely: It is hoped that this master plan will be immediately followed up with a feasibility study for the development of agricultural markets and agribusiness sub-terminals aimed at supporting agropolis development (mainland) and all its supporting areas (hinterland).

▪ Problem

Various problems are faced, including the development of agricultural products that have not received full macroeconomic support, limited physical and economic infrastructure networks, as well as unexplored potential and investment opportunities in all sectors so that investors are more interested in investing in developed regions. In addition, fiscal and monetary policies have not been in favor of the agricultural sector, which is marked by the free entry of imported agricultural products and high agricultural credit interest rates. (Pratama, Listyaningsih, & Widyastuti, 2016).

Probolinggo Regency as a district that has a variety of superior products in each sub-district, especially for the seven sub-districts designated as agropolitan areas, is experiencing difficulties in marketing its products due to lack of facilities and infrastructure, so it is necessary to build a farmer market and agribusiness sub-terminal to accommodate agricultural products in agropolitan development area (Patiung, 2018).

The research objectives are to analyze the feasibility of developing an agropolitan area from the financial and infrastructure aspects.

RESEARCH METHODS

▪ **Data and Data Sources,** The data used in this research are:

1. Primary data, is data that is sourced / obtained directly from informants. The data obtained from these respondents are in the form of recorded interviews, observations and field notes.
2. Secondary data, is data obtained from archives, documents, literature, and others that are used to support research. The basic data are: (1) RPJMD Probolinggo Regency 2018-2023; (2) LKPJ Regent of Probolinggo Year 2020; (3) Probolinggo Regency in Figures of the Last

Year; (4) related OPD Supporting Data; (5) District Data in Figures.

- **Data collection technique,** through several ways, including through interviews / interviews, FGDs and literature studies.
- **Data Analysis,** aanalysis of the financial / financial aspects is carried out using: Revenue Cost Ratio analysis; Payback Period (PP); Net Present Value (NPV); Internal Rate of Return (IRR), Sambodo (2002).

RESULTS AND DISCUSSION

Krucil Market Financial Analysis

Economic analysis is carried out with the intention of evaluating the feasibility of the project. The methods used are Payback Period, Net Present Value (NPV), Benefit Cost Ratio (BCR) and Internal Rate Return (IRR).

Economic and Financial Aspects are analyzed using the following assumptions:

- a. The amount of investment analyzed is estimated to cost IDR 1,343,926,000 (One Billion Three Hundred Forty Three Million Nine Hundred Twenty Six Thousand Rupiah).
- b. The building's economic age is 20 years, according to the Government Regulation of the Republic of Indonesia Number 27 of 2014 concerning State / Regional Property Management, with a residual value of 40%, depreciation using the straight-line method.
- c. The interest rate is 11.66%.
- d. The discount factor used in the analysis is 11.66% per year and the analysis period is 20 years based on the capital interest rate.
- e. Stand rent increases by 5% every 5 years to adjust for the inflation rate.
- f. Operating Costs increase by 5% every 5 years to adjust for the inflation rate.

Income is obtained from the calculation of the rental of powder and booths, parking fees, merchant fees, security and cleaning fees, and toilet fees.

Table 1. Income Recapitulation

No.	Description of the type of fee	Price / year
1	Talc and Los	Rp. 219,368,400
2	Parking Retribution	Rp. 144,000,000
3	Merchant Retribution	Rp. 18,720,000
4	Security and Hygiene Levies	Rp. 25,920,000
5	Retribution for MCK	Rp. 37,980,000
amount		Rp. 445,988,400

Source: Analysis Results, 2020

Costs Annual project expenses are calculated from market operational and building maintenance costs as well as building depreciation / depreciation costs.

Table 2. Recapitulation of Expenditure Costs

No.	Description of the type of fee	Price / year
1	Cost management	Rp. 181,200,000
2	Maintenance of Facilities and Infrastructure	Rp. 12,619,020
3	Depreciation Cost of Building	Rp. 40,317,780
	Total Expenses / year	Rp. 234,136,800

Source: Analysis Results, 2020

The results of the financial analysis for the construction of the Krucil Market are as follows:

- The NPV calculation is as follows:

$$\text{NPV} = \text{Total Net Cash Inflow} - \text{Total Investment}$$

$$= \text{Rp. 1,626,995,889} - \text{Rp. 1,343,926,000}$$

$$= \text{Rp. 283,069,889}$$
 Because $\text{NPV} > 0$, the investment proposal can be said to be financially feasible.
- The calculation of B / C is as follows:

$$\text{B / C} = \text{Total Net Cash Inflow} / \text{Total Investment}$$

$$= \text{Rp. 1,626,995,889} / \text{Rp. 1,343,926,000}$$

$$= 1.22$$
 The B / C value obtained is 1.22, the investment can be accepted because the benefits arising from the implementation are greater than the costs invested. The project is feasible to implement.
- Internal Rate of Return (IRR) must be higher than the commercial interest rate (11.66% / year). The calculation result shows that the IRR is 21.06%, so it can be said to be feasible. The project is a prospect for the future.
- Pay Back Period* obtained 11 years 11 months, so the Krucil Market development project is feasible because the pay back period is less than 20 years.
- The status of the Krucil market land is under the control of the Probolinggo Regency Government.

Jetak Market Financial Analysis

Economic analysis is carried out with the intention of evaluating the feasibility of the project. The methods used are Payback Period, Net Present Value (NPV), Benefit Cost Ratio (BCR) and Internal Rate Return (IRR).

Economic and Financial Aspects are analyzed using the following assumptions:

- The amount of investment analyzed is estimated to cost IDR 1,497,368,000 (One Billion Four Hundred Ninety-Seven Million Three Hundred Sixty-Eight Thousand Rupiah).
- The building's economic age is 20 years, according to the Government Regulation of the Republic of Indonesia Number 27 of 2014 concerning State / Regional Property Management, with a residual value of 40%, depreciation using the straight-line method.
- The interest rate is 11.66%.
- The discount factor used in the analysis is 11.66% per year and the analysis period is 20 years based on the capital interest rate.
- Stand and land rental increases by 5% every 5 years to adjust for inflation rates and land rental increases.
- Operating Costs increase by 5% every 5 years to adjust for the inflation rate.

Income is obtained from the calculation of the rental of powder and booths, parking fees, merchant fees, security and cleaning fees, and toilet fees.

Table 3. Income Recapitulation

No.	Description of the type of fee	Price / year
1	Talc and Los	Rp. 253,613,160
2	Parking Retribution	Rp. 158,400,000
3	Merchant Retribution	Rp. 15,840,000
4	Security and Hygiene Levies	Rp. 22,320,000
5	Retribution for MCK	Rp. 40,680,000

Source: Analysis Results, 2020

Annual project expenses are calculated from market operational costs and building maintenance, land rental costs because the land that will be used is land owned by PT. Telkomsel and building depreciation / depreciation costs.

Table 4. Recapitulation of Expenditure Costs

No.	Description of the type of fee	Price / year
1	Cost management	Rp. 162,000,000
2	Maintenance of Facilities and Infrastructure	Rp. 14,095,530
3	Land lease	Rp. 36,000,000
4	Depreciation Cost of Building	Rp. 44,921,040
	Total Expenses / year	Rp. 257,016,570

Source: Analysis Results, 2020

The results of the financial analysis for the development of Pasar Jetak are as follows:

a. The NPV calculation is as follows:

$$\begin{aligned} \text{NPV} &= \text{Total Net Cash Inflow} - \text{Total Investment} \\ &= \text{Rp. 1,801,179,743} - \text{Rp. 1,497,368,000} \\ &= \text{Rp. 303,811,743} \end{aligned}$$

Because $\text{NPV} > 0$, the investment proposal is said to be financially feasible.

b. The calculation of B / C is as follows:

$$\begin{aligned} \text{B / C} &= \text{Total Net Cash Inflow} / \text{Total Investment} \\ &= \text{Rp. 1,801,179,743} / \text{Rp. 1,497,368,000} \\ &= 1.21 \end{aligned}$$

The B / C value obtained is 1.21, the investment is acceptable because the benefits arising from the implementation are greater than the costs invested. The project is feasible to implement.

c. Internal Rate of Return (IRR) must be higher than the commercial interest rate (11.66% / year). The calculation result shows that the IRR is 20.29%, so it can be said to be feasible. The project is a prospect for the future.

d. *Pay Back Period* obtained 12 years 2 months, so the Pasar Jetak development project is feasible to carry out because the pay back period is less than 20 years.

e. Land status owned by PT. Telkom, where PT. Telkom intends to cooperate with the village to build a vegetable and fruit market.

Financial Analysis of Leaning Sub-Terminal

Economic analysis is carried out with the intention of evaluating the feasibility of the project. The methods used are Payback Period, Net Present Value (NPV), Benefit Cost Ratio (BCR) and Internal Rate Return (IRR). Economic

and Financial Aspects are analyzed using the following assumptions:

- The amount of investment analyzed is estimated to cost Rp. 5,302,339,000, - (Five Billion Three Hundred Two Million Three Hundred Thirty-Nine Thousand Rupiah).
- The building's economic age is 20 years, according to the Government Regulation of the Republic of Indonesia Number 27 of 2014 concerning State / Regional Property Management, with a residual value of 40%, depreciation using the straight-line method.
- The interest rate is 11.66%.
- The discount factor used in the analysis is 11.66% per year and the analysis period is 20 years based on the capital interest rate.
- Stand rent increases by 5% every 5 years to adjust for the inflation rate.
- Operating Costs increase by 5% every 5 years to adjust for the inflation rate.

Income is obtained from the calculation of the rental of powder and booths, parking fees, merchant fees, security and cleaning fees, and toilet fees.

Table 5. Income Recapitulation

No.	Description of the type of fee	Amount of Price / year (Rp)
1	Kiosk rental	Rp. 834,336,000
2	Parking Retribution	Rp. 53,280,000
3	Merchant Retribution	Rp. 358,200,000
4	Security and Hygiene Levies	Rp. 53,280,000
5	Retribution for MCK	Rp. 87,120,000
	amount	Rp. 1,386,216,000

Source: Analysis Results, 2020

Costs Annual project expenses are calculated from market operational and building maintenance costs as well as building depreciation / depreciation costs.

Table 6. Recapitulation of Expenditure Costs

No.	Description of the type of fee	Amount of Price / year (Rp)
1	Cost management	Rp. 253,200,000
2	Maintenance of Facilities and Infrastructure	Rp. 50,720,675

No.	Description of the type of fee	Amount of Price / year (Rp)
3	Depreciation Cost of Building	Rp. 159,070,170
	Total Expenses / year	Rp. 462,990,845

Source: Analysis Results, 2020

The results of the financial analysis for the construction of the Condong Agribusiness Sub Terminal are as follows:

1. The NPV calculation is as follows:

$$\text{NPV} = \text{Total Net Cash Inflow} - \text{Total Investment}$$

$$= \text{Rp. 7,258,362,064} - \text{Rp. 5,302,339,000}$$

$$= \text{Rp. 1,956,023,064}$$
Because the $\text{NPV} > 0$, the investment proposal can be said to be financially feasible.
2. The calculation of B / C is as follows:

$$\text{B / C} = \frac{\text{Total Net Cash Inflow}}{\text{Total Investment}}$$

$$= \text{Rp. 7,258,362,064} / \text{Rp. 5,302,339,000}$$

$$= 1.37$$
The B / C value obtained is 1.37, the investment can be accepted because the benefits arising from the implementation are greater than the costs invested. The project is feasible to implement.
3. Internal Rate of Return (IRR) must be higher than the commercial interest rate (11.66% / year). The calculation result shows that the IRR is 36.9% so it can be said to be feasible. The project is a prospect for the future.
4. *Pay Back Period* obtained 9 years 11 months, so the Lean Agribusiness Sub Terminal development project is feasible because the capital will return before 20 years.
5. The land status belongs to the East Java Provincial Agriculture Office.

Infrastructure Aspect Feasibility Analysis

Discussions on the infrastructure aspects of the feasibility study are prioritized to follow up on the master plan recommendations, and are realized through the creation of a site plan. Site plan is a plan of a construction site, showing the position and dimensions of the building to be erected along with the size and contour lines of the land or it can be called the top view of the building as we see it from above.

Site plans shows everything that is on a land. This includes built-in areas of a building

(House, Garage, Warehouse, Balcony or Patio) and other additions such as roads, walkways, fences, ponds etc. The site plan should also show any new buildings or additions in the future. Dimensions must also be included in each object with the drawing must be made to scale.

For the development of the farmer's market and the agribusiness sub-terminal, a survey and description of the plan has been carried out and is described in the analysis of the description of the plan, including: Siteplan of Jetak Container Market, Siteplan of Fruit Market / Krucil Farmers Market, Lean Agribusiness Sub Terminal.

The analysis of the plan is based on SNI for the People's Market (2015), by taking into account factors namely market circulation, market accessibility, market facilities, and implementation of market policies, including:

- Market circulation factors, namely: market area, width of the main access road, parking type, vehicle entry and exit access, loading and unloading areas, side barriers.
- Market accessibility factors are: Distance from the main road to the market building, the number of entrances to the market building, the width of the entrances, the number of stairs from the 1st to the 2nd floor, the width of the aisle, the ramp, public transportation.
- Market facility factors, namely: management office, parking area, loading and unloading places, cleaning services, mosques / prayer rooms, toilets. Electricity, Fire extinguishers, Re-measuring posts.

Meanwhile, in implementing market policy, it is necessary to review the following aspects:

- Placement of traders is carried out fairly and transparently and provides equal opportunities for traders
- Zoning according to the grouping of merchandise, with the priority of superior agricultural products in the local agropolitan area
- Placement of traders is directed to give priority to old traders
- If there is an excess or development of a business place, priority scale is given to old traders who do not have an official license or traders who rent a place of business from

official traders.

- Provision of soft loan facilities
- Provide temporary shelter for market traders who are subject to market evaluation
- Putting old traders back in the original market
- Every permit holder and ID CARD must provide a trash can at the kiosk or booth
- Place, arrange merchandise and or other equipment on a regular basis
- The permit holder is prohibited from residing or staying overnight in the market or at the place of selling.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The development of the farmer's market, namely the development of the Krucil fruit and vegetable market, the construction of a flat storage market and the development of the leaning agribusiness sub-terminal, and infrastructure are very feasible to build in the context of developing an agropolitan area and need to be continued in the Detail Engineering Design (DED).

Recommendation

1. There is a need for a container market / transit market / farmer's market in Sumber District and Lumbang District (an alternative to Pandansari Village), which serve sorting and packaging to maintain and control the quality of agricultural products. And accompanied by road improvements to facilitate access to the City of Probolinggo / toll access in order to shorten the supply chain and marketing (supply chain).
2. The Siteplan design of the Condong Agribusiness Sub Terminal can be developed into modern warehousing, accompanied by the development of a drainage network, road widening around the Condong Market, and the construction of a rural / urban transportation vehicle terminal as an increase in the mode of transportation connecting the Krucil Cluster, Gading with the Surabaya-Situbondo axis road in Teach.

BIBLIOGRAPHY

- Anonymous, SNI for People's Market. 2015.
- _____, Government Regulation of the Republic of Indonesia Number 27 of 2014 concerning Management of State / Regional Property.
- _____, Probolinggo District Medium Term Development Plan. 2018-2023.
- _____, Performance Accountability Report of the Regent of Probolinggo. 2020.
- Bachrein, S. (2003). Determination of provincial superior commodities. Research journal. Research and Development Center for Agricultural Technology. Bogor.
- Endang, ZFISM, Sa'id, G., & Munandar, TBA (2009). Agroindustry Based Agropolitan Institutional Design With Analytical Network Process. Journal of Agroindustrial Technology, 19 (3).
- Fitriani, N. (2015). Analysis of supplier selection (supplier) of bogor sangkuriang layer products at PT. Agrinesia Raya, Bogor, West Java.
- Iqbal, M., & Anugrah, IS (2016). Agropolitan policy synergy design and local economic development support the acceleration of regional development. Agricultural Policy Analysis, 7 (2), 169–188.
- Margolang, N. (2018). What is Agropolitan. Retrieved from <http://www.deptan.go.id>.
- Murty, BDA, Domai, T., & Riyanto, R. (2016). Implementation of the Sembalun Agropolitan Area Development Program, East Lombok Regency. Indonesian Journal of Environment and Sustainable Development, 7 (2).
- Patiung, M. (2018). Preparation of the Probolinggo Regency Agropolitan Area Development Master Plan.
- Agriculture, D. (2002). Grand Strategy for Agro-Industry Development of Agricultural Products Processing Industry. Directorate General of Agricultural Product Processing and Marketing Development, Ministry of Agriculture.

Pratama, G., Listyaningsih, L., & Widyastuti, Y. (2016). Implementation of the Agropolitan Area Development Program, Baros District, Serang Regency. Sultan Ageng Tirtayasa University.

Sambodo, MT (2002). Analysis of the Leading Sector of West Kalimantan Province. Journal

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