



## Strategy for Developing an Environmental Industrial Area in Malang Regency

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### **Abstract**

Increasing industrial competitiveness is one of the choices that must be made so that national industrial products are able to compete both domestically and abroad. The existence of industrial estates is beneficial for local governments and investors. The form of this research is in the form of a feasibility study of an industrial area in the village of Jabung, Malang Regency, which is intended to provide direction for the development of the industrial sector through the concentration of industry in an area to strengthen the economic structure and develop industries based on local potential and create an industrial area that is environmentally sound. The method used in this research is the SWOT method. Determination of the objective factors was obtained based on a questionnaire from the community, community leaders, entrepreneurs, and the government. Based on the concept of an industrial system in the Jabung industrial area, Malang Regency, which pays attention to the surrounding environment, it can be concluded that the implementation of the program is in accordance with the zoning regulations of environmentally sound industrial areas. In addition, the development of industrial areas and in the area around the industry is included in quadrant II, room C, so the strategy used in the development of the industrial area is Aggressive Maintenance Strategy, namely an internal consolidation strategy by making improvements in various fields, so that the development of the industrial area in Jabung village is feasible to be developed. in accordance with existing regulations so that the form of industrial estate management based on government regulation no. 24 of 2009 concerning industrial areas.

**Keywords:** *Industrial Development Strategy; Industrial Estate; SWOT Analysis*

### **Introduction**

Industrial development is one of the pillars of national economic development, which is directed by applying the principles of sustainable industrial development based on aspects of economic, social and environmental development. Currently, industrial development is faced with global competition which greatly influences the development of national industry. Increasing industrial competitiveness is one of the choices that must be made so that national industrial products are able to compete both domestically and abroad. Steps in the framework of increasing competitiveness and investment attractiveness, namely the creation of a conducive, efficient business climate, legal certainty, and the provision of fiscal facilities as well as other conveniences in Industrial business activities, which include the availability of adequate Industrial locations in the form of Industrial Estates.

As an effort to encourage industrial development, it is necessary to develop industrial locations in the form of industrial estates in accordance with Law Number 3 of 2014 concerning Industry. The development of industrial estates is a means to develop industries that are environmentally sound and provide convenience and attractiveness for investment with an approach to the concept of efficiency, spatial planning, and the environment.

The macro environment determines the development opportunities of the company's functions, measures its impact on the environment, reduces the uncertainty of business operations and makes strategic adjustments (Rymarzak & Siemińska, 2012). Various issues in business activities are government policies related to economic and social activities, creating conditions and principles for the functioning of various businesses (Mudambi, 2002). The economic system, the degree of freedom and market opportunities are very important in business objectives, the assessment of the level of productivity, and the choice of location affect the decisions for the company (Rymarzak & Siemińska, 2012). On the other hand, the factors that affect the attractiveness of a location from a market perspective for a product, information, or service include the number of consumers, purchasing power, and transportation between consumers and locations. This transportation involves the delivery of goods to the buyer or the means for the buyer to get to the point of sale or service (Cushman and Wakefield, 2007). While the supply side is determined by location conditions that allow specific businesses directly or indirectly, investment expenditures at the construction stage and the level of company profitability in the form of natural resources, human resources, technical facilities, raw materials and energy (Azevedo-Pereira et al, 2010).

The development of industrial estates plays a major role in encouraging economic growth in various countries (Baster, 1987), especially in the provision of infrastructure for the manufacturing industry. The increasing purchasing power/consumption in Asian countries has accelerated the emergence of new industrial areas that are competitive (Huo, 2014) and are export-oriented. Industrial estates directly affect the increase in domestic and foreign investment (Wang, 2013), accommodate new technologies and adapt to change (Galloway & Newman, 2014) and synergize with local industries in improving the regional economy (Hwa, 2016). Indonesia is part of the global economic constellation that needs to increase competitiveness by building an integrated industrial area, where the program plays a strategic role as a growth catalyst and creates jobs and equitable development (Hartarto, 2016). In addition, industrial estates create attractive market competition (Galloway & Newman, 2014), build partnerships between government, companies and communities (Panyathanakun et al., 2013), with collaborative principles, facilitating joint ventures, developing research and innovation and increasing competitiveness. company (Sosnovsikh, 2017).

The existence of industrial estates is beneficial for local governments and investors. The easiest and fastest way to attract investors is to direct them to build their factories in industrial estates. This is because all permits related to the establishment of factories are the responsibility of the industrial estate manager. Including the provision of a waste disposal system and water treatment facility. The development of industrial estates can have an impact on improving the community's economy but is often faced with the problem of scarcity/limited resources, for that limited resources, both natural resources and human resources, must be utilized as efficiently and effectively as possible. the development of natural resource potential and the spatial plan that has been determined must be taken into consideration in the Feasibility Study of the Jabung Industrial Estate.

The Feasibility Study of the Jabung Industrial Estate is intended to provide direction for the development of the industrial sector through the concentration of industry in an area to strengthen the economic structure and develop local potential-based industries and create an industrial area that is environmentally sound in accordance with applicable regulations and can support economic growth in Malang Regency. with the preparation of a guide in the form of an Industrial Estate Masterplan and a Business Plan.

## **Literature Review**

### **Industrial Estates**

Industrial Estate is a place where industrial activities are concentrated, equipped with infrastructure and facilities provided and managed by industrial estate companies. This is different from the Industrial Zone which is also an industrial concentration but without being equipped with adequate infrastructure and facilities (Winarno & Nugroho, 2020).

According to the Industrial Development Handbook from ULI (The Urban Land Institute), Washington DC (1975), an industrial area is an area or area that is usually dominated by industrial activities. Industrial estates usually have a combination of facilities consisting of industrial plants, research and laboratories for development, office buildings, banks, and other infrastructure such as social and public facilities which include offices, housing, schools, places of worship, open spaces, and others. The term industrial area in Indonesia is still relatively new. The term is used to express an understanding of the place where a group of industrial companies is concentrated in a separate area. Industrial estates are intended as the equivalent of industrial estates. Previously, such grouping of industries was called "industrial environment".

According to the Regulation of the Minister of Public Works Number: 20/Prt/M/2011 concerning Guidelines for Preparation of Detailed Spatial Planning and Regency/City Zoning Regulations, industrial and/or warehousing areas are areas that are directed and designated for industrial development and/or warehousing and their supporting facilities. Industrial Estate is an area where industrial activities are concentrated, equipped with supporting facilities and infrastructure developed and managed by industrial estate companies. Industrial estates in this definition are places where industrial activities are developed and managed by industrial estate companies that already have industrial estate business permits.

### **Social and Economic Change**

Conflict is one of the essences of human life and development which has various characteristics. Humans have gender differences, social and economic strata, legal systems, nations, ethnicities, religions, beliefs, and cultures and different life goals, these differences are the background of conflict. Conflict is a difference in perception of interests that occurs when there is no visible alternative. As long as there are differences, conflict cannot be avoided and will always occur that can satisfy the aspirations of both parties. Conflicts are of many types and can be grouped according to various criteria. For example, conflicts can be grouped based on the background of the conflict, the parties involved in the conflict, and the substance of the conflict, including personal conflict and interpersonal conflict, conflict of interest, reality conflict and non-reality conflict, destructive conflict and constructive conflict, and conflict by field of life (Wirawan, 2010).

Economics is a human activity related to the production, distribution, exchange, and consumption of goods and services. Economics in general or specifically is the rule of the household or household management (Ministry of National Education, 2001). Economics is also said to be a science that explains how to produce, distribute, share and use goods and services in society so that the material needs of society can be met as well as possible. Economic activity in the community is to regulate the affairs of assets, both those concerning ownership, development and distribution (Sholahuddin, 2007). Humans live in a group that forms a system. The system can simply be interpreted as the interaction, linkage, or relationship of smaller elements to form larger units and are complex in nature. Thus the economic system is the interaction of small units (consumers and producers) into larger economic units in a certain area (Deliarnov, 2009). There are several definitions of economics (Suparmono, 2004), but basically all these definitions have the same meaning. In general, the definition of economics is a branch of science

that studies how humans meet unlimited needs with limited means of satisfying needs. In the definition of economics contained the notion that:

- a) The science of how humans meet needs.
- b) Economics is the science of choices.
- c) Knowledge of how to allocate limited resources.

### **Industrial Estate Qualification**

Based on the Regulation of the Minister of Industry Number 35/M-IND/PER/3/2010, the development of an industrial area cannot be separated from the selection of the location of the industrial area to be developed, because it is strongly influenced by several factors/variables in the area where the area is located. In addition, the development of an industrial area will also have an impact on several functions around the location of the area. Therefore, several criteria are considered in the selection of industrial area locations, including distance to the city center, distance to settlements, road network that serves, network of facilities and infrastructure, topography, distance to rivers or clean water sources, land conditions and availability, location orientation and land use patterns.

Determination of designated industrial areas is directed at each district/city, either in the form of industrial areas, small and medium-sized industrial centers, as well as industrial companies. Industrial estates must pay attention to the condition of the land from the aspect of disaster, and topography. In this criterion, industrial designation areas must pay attention to the carrying capacity of the land and the capacity of the land, not located in high risk disaster-prone areas, and from a topographical point of view, do not have a land slope of more than 15 percent. Industrial designation areas pay attention to the status and pattern of land use from the aspect of land use and spatial planning. Industrial designation areas may not be located on customary lands, sustainable food agriculture lands, and are not in protected areas. Industrial designation areas meet the provisions of land area in accordance with statutory regulations. Industrial estates have accessibility that can facilitate the transportation of raw materials and logistics, movement of labor, and distribution of production products.

This accessibility considers several transportation routes, such as land transportation in the form of regional lines, toll roads or train stations. In addition, there are river transportation routes for areas with rivers as the main transportation routes, sea transportation routes with ports for coastal areas, or air transportation routes. Sources of this raw water include surface water, and clean water managed by regional drinking water companies, and industrial wastewater treatment. These criteria include sea, surface water or land application. In addition to meeting the six technical criteria, local governments can also consider the availability of energy and electricity networks, the availability of telecommunications networks, settlement density and conformity with regional industrial development plans.

### **Research Methods**

The research method was designed to answer questions and objectives through a questionnaire. This is the entire process required in planning and conducting research (Kerlinger, 1993). Industrial designation areas in Malang Regency will be developed in the form of industrial areas, industrial locations that have developed and home industries. The industrial area developed will be concentrated in two locations, namely in Jabung District with an area of about 200 hectares. The existing location of Jabung District is an agricultural land area. Directions for industrial development that are adapted to the designated industrial designation areas are expected to develop industry in Malang Regency by utilizing the potential that exists in their respective regions, especially in Jabung District.

Land quality or land characteristics are ranked from the best to the worst or from the least obstacle or threat to several areas based on striking differences in land characteristics. The method used in this research is the SWOT analysis method by classifying land capability using the limiting factor method and determining the advantages and disadvantages of each aspect. Determination of destination factors based on regional location and economic conditions in the surrounding area. In addition, it is strengthened by an in-depth analysis in the form of an analysis of the carrying capacity of the land. Calculation of the carrying capacity of land in Malang Regency uses a level 3 calculation level or details based on the Regulation of the Minister of the Environment No. 17 of 2009.

## ***Results and Discussion***

### **Forms of Management of Jabung Industrial Estate**

The success and sustainability of an industrial area cannot be separated from the management method carried out by the industrial estate company concerned. For this reason, the forms and functions of the organizations/institutions that are designed must use modern and professional business principles. Investment in the context of developing industrial estates is a long-term activity, which within certain limits has a strategic role as a driver of regional/national economic growth. For industrial estate investment, in general, financial schemes are purely commercial in nature. Basically, industrial estate investment activities have two characteristics, namely:

- a) The need for a sizable initial investment related to land acquisition and infrastructure development in the area;
- b) Possibility of a relatively long return on investment that requires a high business risk analysis and guarantees long-term business stability.

These two things are the main consideration factors in the financial feasibility analysis. In addition to the above, in terms of business climate factors, industrial estate investment requires the support of policies and regulations as well as infrastructure and physical facilities such as accessibility to ports, airports, electricity/energy supply, clean water supply, communication services. The support for the business climate is a basic prerequisite that needs to be met before a financial feasibility analysis is carried out. There are 3 (three) types of investment patterns that can be made for the development of industrial estates, namely investment entirely by the government (regional), investment by the private sector, and investment in public-private partnerships (Public Private Partnership).

To support activities in Industrial Estates and attract investors, Central and Regional Government support is needed in terms of:

- a) Ease and ease of licensing fees;
- b) Relief in the field of taxation, especially land and building tax (PBB) in Industrial Estates;
- c) Preparation of trained human resources;
- d) Procurement of infrastructure in the form of certainty of electricity supply, road access, water sources and telecommunications networks;
- e) Guarantee of land acquisition to avoid speculators;
- f) Security guarantee

### **Industrial Estate Development Strategy**

SWOT analysis is one of the analytical techniques used in interpreting the planning area, especially in very complex conditions where external and internal factors play an equally important role as a negative factor. Then we get a kind of core strategy which in principle is:

- a) Strategies that take advantage of existing strengths and opportunities openly
- b) Strategies that address existing threats.
- c) Strategies that improve existing weaknesses.

SWOT is literally an acronym consisting of the concept of S (Strength): a state or condition that exists / is owned, which is considered / is a good thing. W (Weakness/problem): a state or condition that is considered to have a weakness or problem. O (Opportunity): a condition or condition that exists or will occur in / around an area that is considered to have the opportunity to be used for potential development. T (Threat/obstacle): a condition / condition that exists or will occur in / around the area which is considered to be able to inhibit / threaten the development of potential. Based on the results of the data obtained at the research location as follows:

a) Strength

- The position of Jabung District which is located close to Arterial Road and the center of Singosari District makes Jabung District easy to access from all directions
- The number of work force is still high and the quality of Human Resources
- Relatively high land productivity (agriculture and plantations)
- Active community participation in developing industrial estates
- Availability of infrastructure networks such as clean water, electricity, telephone, and drainage strongly supports the development of industrial estates
- Abundant potential of raw materials, especially for the wood processing industry and agricultural product processing industry

b) Weakness

- Infrastructure is still inadequate, especially the bridge that connects Jabung Sub-district with Pakis District
- The physical condition of the Jabung District is hilly so that it requires large enough land preparation to develop an industrial area
- The condition of the road network, which is a local road, thus requiring road widening and improving the quality of the road network
- The state of the workforce with low human resources is very influential on the quality and quantity of production and also affects the company's and regional incomes

c) Opportunity

- Government policy support to develop industrial estates in Jabung District
- Opportunities to develop the tertiary sector in services and industry
- Can generate local economy
- There are many SMEs that can be developed to support the existence of industrial estates

d) Threats

- Most of the land use in Jabung District is productive agricultural land
- High business competition with other regencies such as Pasuruan Regency and Sidoarjo Regency which have developed industrial areas
- The price of raw materials, which is getting more and more expensive, has an effect on production costs, which in turn affects the selling price to consumers
- The increase in labor wages also affects the increase in production costs

Table 1. Industrial Estate SWOT Aspects

Aspect			
Strength	Weakness	Opportunity	Threats
<ul style="list-style-type: none"> <li>• The position of Jabung District which is located close to Arterial Street and the center of Singosari District makes Jabung District easy to access from all directions.</li> <li>• The number of workforce is still high and the quality of human resources</li> <li>• Relatively high land productivity (agriculture and plantations)</li> <li>• Active community participation in developing industrial estates</li> <li>• Availability of infrastructure networks such as clean water, electricity, telephone, and drainage strongly supports the development of industrial estates</li> <li>• Abundant potential of raw materials, especially for the wood processing industry and agricultural product processing industry</li> </ul>	<ul style="list-style-type: none"> <li>• Infrastructure is still inadequate, especially the bridge that connects Jabung Sub-district with Pakis District</li> <li>• The physical condition of the Jabung District is hilly so that it requires large enough land preparation to develop an industrial area</li> <li>• The condition of the road network, which is a local road, thus requiring road widening and improving the quality of the road network</li> <li>• The state of the workforce with low human resources is very influential on the quality and quantity of production and also affects the company's and regional incomes</li> </ul>	<ul style="list-style-type: none"> <li>• Government policy support to develop industrial estates in Jabung District.</li> <li>• Opportunities to develop the tertiary sector in services and industry</li> <li>• Can generate local economy</li> <li>• There are many SMEs that can be developed to support the existence of industrial estates</li> </ul>	<ul style="list-style-type: none"> <li>• Most of the land use in Jabung District is productive agricultural land</li> <li>• High business competition with other regencies such as Pasuruan Regency and Sidoarjo Regency which have developed industrial areas</li> <li>• The price of raw materials, which is getting more and more expensive, has an effect on production costs, which in turn affects the selling price to consumers</li> <li>• The increase in labor wages also affects the increase in production costs</li> </ul>

Some aspects of SWOT include aspects of strengths (S), weaknesses (W), opportunities (O) and threats (T), where all four are related to one another. With this linkage, several strategies or basic development concepts will be obtained that can be used in the development of the Jabung Industrial Estate, both physical and non-physical. Determination of the basic concept of development is carried out based on a SWOT analysis by conducting an assessment (weighting) using the IFAS-EFAS analysis for regional development, then the results of the assessment (weighting) are displayed in the form of a quadrant which will determine the next development strategy.

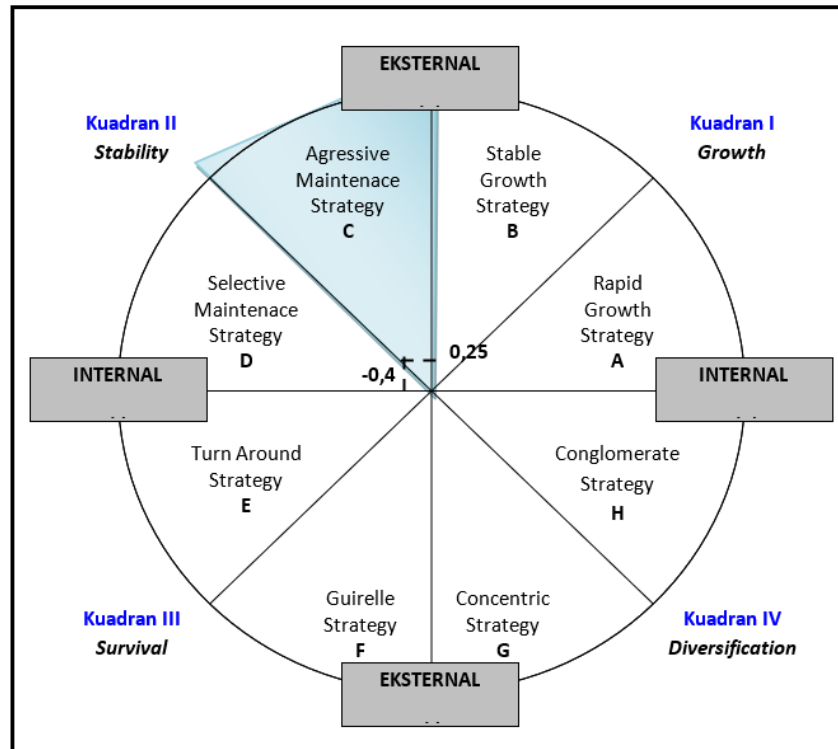


Figure 1. Pengembangan Kawasan Industri

Based on the picture above, the Jabung Industrial Estate Development is in quadrant II room C, so the strategy used in the Jabung Industrial Estate Development is Aggressive Maintenance Strategy, namely an internal consolidation strategy by making improvements in various fields. Improvement of weakness factors to maximize the use of opportunities. The basic strategies that will be carried out include:

- 1) Development and development of industrial estate centers in an integrated (concentric) and mutually supportive manner through a participatory planning approach from the bottom (bottom up planning).
- 2) Development of supporting infrastructure is carried out by involving the participation of business actors and local governments.
- 3) Improving the production management system, including sources of raw materials, processing technology, workforce training, business capital assistance, and marketing strategies.

## Conclusion

Based on the concept that has been described previously, namely the application of the concept of industrial ecology which is analogous to a natural ecological system, which is usually driven by solar energy, ecosystems, including mutualistic relationships between various micro-organisms and the surrounding environment where material exchange occurs through a large cycle, conclusions can be drawn. that the industrial system in the Jabung industrial area that pays attention to the surrounding environment must implement a program according to the industrial area zoning regulations that are environmentally sound. Based on the results of the strategy for developing the industrial area, it is in quadrant II, room C, so the strategy used in the development of the industrial area is the Aggressive Maintenance Strategy, which is an internal consolidation strategy by making improvements in various fields. Improvement of weakness factors to maximize the use of opportunities.



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