



ANALYSIS OF SUSTAINABLE DEVELOPMENT CONCEPT IN LEGI MARKET BUILDING AT PONOROGO REGENCY

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ABSTRAK

Pasar Legi sangat memiliki peran yang sangat penting dan signifikan pada kehidupan masyarakat di Kabupaten Ponorogo, dimana bangunan Pasar Legi ini menjadi tempat untuk aktivitas perdagangan yang utama bagi masyarakat Kabupaten Ponorogo, para pedagang dari penjuru wilayah Kabupaten Ponorogo menjual berbagai produk berupa untuk kebutuhan primer dan sekunder. Tidak hanya itu saja, Pasar Legi ini juga menjadi wadah pertemuan budaya dan sosial dimana tercipta intraksi antar masyarakat. Seiring pesatnya kemajuan zaman, bangunan Pasar Legi terdapat peningkatan yang signifikan pada fasilitas pasar, hal tersebut sebagai pemenuhan aktivitas dan pemenuhan kebutuhan pengguna pasar. Tujuan penelitian ini untuk menjelaskan dan menganalisa terkait dengan aspek konsep pembangunan berkelanjutan pada bangunan Pasar Legi, analisa tersebut mencakup pada building science. Metode penelitian yang digunakan dalam penelitian ini menggunakan pendekatan diskriptif kualitatif, untuk pengumpulan data penelitian ini dengan observasi langsung ke Pasar Legi, wawancara langsung dengan pengelola pasar dan pengguna pasar, serta studi literatur yang terkait meliputi laporan, catatan dan arsip yang bertujuan untuk melengkapi dan memvalidasi data penelitian. Hasil dari penelitian ini untuk mengetahui konsep pembangunan berkelanjutan pada bangunan Pasar Legi yang terakit dengan aspek building science, yang meliputi desain bangunan berkelanjutan yang berpedoman pada konsep bangunan hijau, pengelolaan energi yang berkelanjutan berupa inovasi West to Energy, kenyamanan dan keamanan pengguna pasar meliputi penyediaan fasilitas bagi penyandang disabilitas serta sistem keselamatan dan keamanan bangunan, sistem pencahayaan dan penghawaan alami, efisiensi penggunaan lahan berupa terdapatnya ruang terbuka hijau di sekitar bangunan Pasar Legi, adaptasi bangunan untuk zaman mendatang, dan solusi dalam pengelolaan air serta limbah. Maka penelitian ini dapat menjadi rekomendasi bagi Pemerintah Daerah Kabupaten Ponorogo dalam meningkatkan aspek pembangunan berkelanjutan pada Pasar Legi yang kedepannya dapat diintegrasikan dalam pengembangan fasilitas pendukung pasar yang lebih baik, dengan berpedoman pada konsep bangunan hijau, dan mengedepankan keamanan dan kenyamanan pengguna bangunan, dengan tetap memperhatikan kelangsungan lingkungan sekitar.

Kata Kunci: Konsep Pembangunan Berkelanjutan, Aspek-Aspek Berkelanjutan, Bangunan Pasar Legi di Kabupaten Ponorogo.

ABSTRACT

Legi Market has a very important and significant role in people's lives in Ponorogo Regency, where the Legi Market building is a place for main trading activities for the people of Ponorogo Regency, traders from all over the Ponorogo Regency area sell various products for primary and secondary needs. Not only that, Legi Market is also a place for cultural and social meetings where interactions between communities are created. Along with the rapid progress of the times, the Legi Market building has seen a significant increase in market facilities, this is to fulfill activities and fulfill the needs of market users. The aim of this research is to explain and analyze aspects of the concept of sustainable development in the Pasar Legi building, this analysis includes building science. The research method used in this research uses a qualitative descriptive approach, to collect data for this research by direct observation at Legi Market, direct interviews with market managers and market users, as well as related literature studies including reports, notes and archives which aim to

complete and validate research data. The results of this research are to determine the concept of sustainable development in the Legi Market building which is connected to aspects of building science, which includes sustainable building design guided by the green building concept, sustainable energy management in the form of West to Energy innovation, comfort and safety for market users including providing facilities for people with disabilities as well as building safety and security systems, natural lighting and ventilation systems, efficient land use in the form of green open space around the Legi Market building, adapting buildings for the future, and solutions in water and waste management. So this research can be a recommendation for the Regional Government of Ponorogo Regency in improving aspects of sustainable development at Legi Market which in the future can be integrated in the development of better market supporting facilities, guided by the green building concept, and prioritizing the safety and comfort of building users, while still paying attention sustainability of the surrounding environment.

Keywords: Sustainable Development Concept, Sustainable Aspects, Legi Market Building in Ponorogo Regency.

INTRODUCTION

According to Steele (1997), sustainable development is a way that can meet, fulfill and realize current needs without having to reduce and complicate the needs of the next generation. Meanwhile, according to Saliya (2003), sustainable development has many meanings in its interpretation, but in general, sustainable development means the relationship between humans and the natural environment must be balanced. According to Saliya, sustainable architecture is a movement related to architectural design that is friendly and responsive to the surrounding environment.

Sustainable development has its main objective, namely overcoming problems regarding current conditions, namely the human population crisis, economic activities, and environmental problems, and the problem of damage to natural resources. This sustainable development concept tries to anticipate negative impacts on the surrounding environment, residents' comfort and health in the area around the case study, resulting in an increase in sustainable development performance in a developed region or city. Sustainable development functions as a safety regulation so that the direction of construction of a building continues to follow the regulations that have been proclaimed through various stages of development by the central government, so that the series can be sustainable in the future.

Legi Market has a history that has lasted for decades, where the Legi Market building has become a place for main trading activities for the people of Ponorogo Regency. As time goes by, the Legi Market building has experienced significant improvements and changes. In recent years,

the Legi Market building has undergone physical changes in the form of overall development, as well as improvements in infrastructure in the form of supporting facilities aimed at meeting the needs and activities of visitors and traders. Legi Market has a very important and significant role in people's lives in Ponorogo Regency.

Legi Market is a center of economic activity, where traders from all over the Ponorogo Regency area sell various products in the form of agricultural products, clothing, food and daily necessities. Not only that, Legi Market is also a place for cultural and social meetings where interaction between communities is created in the form of information exchange activities so that it will strengthen community ties in social life. The Legi Market building has unique and distinctive characteristics that really differentiate it from other markets, namely in the form of a building with an architectural design that brings out uniqueness and represents traditional culture, namely in the form of Reog Ponorogo art. This appears in the facade of a Pasar Legi building which displays the motifs found in Reog Ponorogo art in the form of peacock feathers, as well as the color philosophy used in this art such as green, red and yellow. Legi Market really maintains a local culture and traditional feel. In this market, visitors who come will feel a unique atmosphere with trading activities in the local language, as well as sellers of knick-knacks related to Reog Ponorogo art.

There are efforts to emphasize the concept of sustainable development of Pasar Legi from the Ponorogo Regency government as a local social and cultural forum. In an effort to develop Legi Market and supporting facilities, as well as introducing local cultural values to the community. These values include kinship, hospitality and mutual



cooperation which are reflected in social interaction activities between visitors and traders which are an inseparable part of community life in Ponorogo Regency. In the context of the concept of sustainable development at Legi Market, it is important to consider sustainability in the form of social, economic, cultural and ecological/environmental aspects. Implementing the concept of sustainable development will not only produce short-term benefits, but will also produce long-term positive impacts. From the aspects of sustainable development, it will also produce contributions that build the quality of society in a balanced and holistic manner in the future. Implementing sustainable development aspects at Legi Market can produce very significant benefits, in the form of sustainability in facilities and infrastructure to create the welfare of traders. So that in the future it can increase the attraction for market visitors, increase productivity, and generate income for traders, which will ultimately improve the welfare of the people of Ponorogo Regency.

LITERATURE REVIEW

1. Market

The market is a place for people's activities to buy and sell goods, the market is also related to the infrastructure and supporting facilities provided by the local government to support the activities of buying and selling goods, needs and services. The market is also a place for interaction between users, the market is also included in the public space in an area/region (Lukito, 2018).

According to Ginanjar (1980), the market is a place that is used by the community to carry out activities of buying and selling goods or services, this is a form of container for trading activity. In the beginning, the market was a place for meetings and circulation between providers of goods or services and bidders.

According to Gilarso (1998), explaining the narrow meaning of the market, namely a place where there are activities of buyers and sellers to buy and sell goods. The sellers will offer goods in the form of basic ingredients in the hope that they will be bought by visitors (buyers) in order to get money in return. The visitors (buyers) come to the market to carry out shopping activities by paying the price of an item they buy.

According to Sulistiyowati (1999), there are 2 main types of aspects that are reviewed on the function of a market, namely from a physical perspective, and from an economic perspective.

According to Karolina (2005), a market has a classification which is divided into several important aspects, namely in the form of types traded in the market, types of activities, hours of operation, market area, ownership status, and visitor capacity.

According to the 2015 Indonesian National Standards Agency (SNI), concerning the Indonesian National Standard on People's Markets, market classification can be divided into four types, namely:

- a. Type I, the total capacity of market traders is more than 750 traders.
- b. Type II, the total capacity of market traders is between 501 and 750 traders.
- c. Type III, the total capacity of traders is between 250 and 500 traders.
- d. Type IV, the total capacity of traders is less than 250 traders.

2. Sustainable Development Concept

According to Brundtland (1987), sustainable development has 4 aspects that need to be considered, namely aspects of economic, social, cultural and ecological development. In the existing aspects of sustainable development that are supported by existing sustainable architectural design theories, such as environmental preservation, urban ecology, energy, water sources, solid waste, and materials used in the construction of a building. The 4 aspects that guide a sustainable development are as follows:

a. Social Aspect

The social aspect of sustainable development is that the residents of an area provide a forum for activities in the community or community to maintain social interaction and improve social quality that is more appropriate and better in that area.

b. Economic Aspect

Economic aspects in sustainable development that provide solutions for the community to increase their economic level and provide value by providing space for a business in the MSME sector.

c. Cultural Aspect

The cultural aspect of sustainable development is how to bring out the identity of the region with the existence of certain cultures, customs and arts in a building.

d. Environmental / Ecological Aspects

The ecological aspect in development is an element that plays a role in designing areas for climate problems and issues. The energy principle prioritizes sustainable development regarding the use of renewable energy materials in building design which has the goal of being efficient and saving on energy. On the principle of waste management in a building, namely by managing liquid or solid waste and waste from the collection process, to the final processing stage which has the goal is not to have a negative impact on the surrounding environment, so that people can live healthily without feeling anxious. Material principles in the sustainable construction of a building regarding the material chosen for the construction of a building that has the durability of a strong and sturdy material, is friendly to the surrounding environment, and the material in which it is installed is easy and practical.

The theories from architectural concepts that support "Sustainable Development" of a building are as follows:

According to Tanuwidjaja (2011), sustainable architecture is a form of way to reduce negative impacts in the development of an environment by using policies and efficiency related to selected materials and energy, spaces for activities designed to make things easier for building users, as well as waste management that can reduce environmental impact. Because every construction and development of a building or area will have an impact on future generations. So there needs to be environmental awareness when planning and designing a building or area.

According to Sudarwarni (2012), sustainable architecture is an applied concept from the field of architecture that can accommodate and fulfill the needs of its users, and can maintain existing natural resources so that they can last longer and be linked to the human ecological environment.

Quoting Jack A. Kramers (in Kurniasih, 2013) states that: "Sustainable Architecture is a response and an expression of celebration of our existence and respect for the world around us". This means that sustainable architecture is a response and expression of our existence and feelings. care about the world around us.

According to Kurniasih (2010), there are architectural principles whose context is relevant to the concept of sustainable development, namely as follows:

a. Efficiency of Material Use

Reusing leftover materials used in the construction of a building will create sustainable materials. In selecting materials to be reused, it is necessary to choose materials that are still suitable and can be reused.

b. Energy Saving Buildings

Buildings that support the concept of sustainable development, by minimizing energy use but without reducing or limiting the function of the spaces or facilities available in the building. It must also prioritize the comfort, security and productivity of its users.

c. Waste Management

Management of waste management by creating a domestic waste management system. In the form of managing dirty water that can still be used. Management of organic waste decomposition systems sourced from domestic waste which can be easily composed naturally.

d. Land use efficiency

As more and more land is used for the development process of a region, it will result in less and less land remaining in the future. This will reduce green open space (green open space) and will even be replaced by modern buildings. So it is necessary during the building planning process to set aside land to be used as RTH (green open space).

RESEARCH METHODS

The method used in this research is ethnography, ethnography is a theoretical and empirical approach which aims to obtain in-depth analysis and descriptions of culture based on intensive direct observation in the field. Ethnographic research also aims to provide a holistic picture of the research subject with the emphasis on photographing users' daily experiences by interviewing and directly observing related individuals. According to Cresweel (2012), ethnography is a qualitative descriptive research procedure in analyzing and explaining various cultural groups completely and comprehensively, including cultural aspects, in the form of material forms such as cultural artifacts (buildings, infrastructure, tools and clothing) and also which has an abstract nature, including norms, local cultural value systems, beliefs, and user experience.

This research method offers the freedom to explore a deep understanding of complex and subjective aspects and provides a richer understanding of the phenomenon



under study. The aim of the ethnographic method in this research is to gain a very in-depth understanding of the application of the concept of sustainability at Legi Market. By using an ethnographic approach, this research aims to describe in detail the elements of sustainability related to Legi Market, including social, cultural, economic and ecological/environmental aspects.

Place and time of research

Research The research was conducted in the Legi Market building located in Ponorogo District, Ponorogo Regency. The time for conducting the research is from August 2022 to October 2022.

Object of research

- a. The object of this study is the Legi Market, which includes the available facilities, the physical characteristics of the market building, the building structure, and the indoor and outdoor spatial layout.
- b. This research may also involve an analysis of the interactions between traders and visitors, as well as the management system.
- c. This study will analyze the aspects of sustainable development that are relevant to the Legi Market building. Aspects analyzed about:
 - Economic Aspect, including goods traded, influence on the people's economy, as well as trade patterns.
 - Social Aspects, including user interactions that occur in it, between visitors, sellers, and the surrounding community.
 - Cultural Aspects, including the local culture that is displayed or that appears in the Legi Market building.
 - Ecological / Environmental Aspects, including energy use, environmental impact on activities that occur in the Pasar Legi area, waste management.

The main object of research taken can provide a clear focus regarding the Legi Market and aspects of sustainable development. By focusing on some of the research objects above, it is hoped that it will provide an in-depth understanding of the Legi Market conditions and provide recommendations for more sustainable market development in the future.

Classification of Research Data

The data collection method in this study uses primary data collection and

secondary data which aims to obtain relevant information. The following describes the data collection method used:

a. Secondary Data

Secondary data refers to data that has been collected by other parties or has previously existed, this data is used as a source of information. Secondary data required is in the form of changes in market structure, historical data about buildings, history of market development and trading activities that occurred, history of economic, cultural and social changes in Ponorogo Regency that affected Legi Market, and also data related to government regulations and development planning at Legi Market. The secondary data obtained produces a deeper and broader understanding regarding aspects of sustainable development at Legi Market. So that later it will be able to support the discussion and analysis in this research.

b. Primary Data

Primary data in this research refers to data that has been collected directly. The data is in the form of direct observations carried out by observing aspects of the Legi Market directly, with the aim of gaining an understanding of the activities that occur in the Legi Market building and in the environment around Legi Market, space layout, space zoning, structure of the market building, supporting facilities, as well as interaction patterns created between visitors and traders or vice versa. Interviews were carried out involving Legi Market managers, visitors, traders and the surrounding community. Interviews were conducted with the aim of obtaining data in the form of information related to perceptions, views, hopes related to aspects of sustainable development at Legi Market.

RESEARCH RESULTS AND DISCUSSION

Overview of Research Location



Figure 1. Legi Market Building

Source: Personal Documentation, 2022.

One of the developments included in the 2019 RPJMD of Ponorogo Regency is rebuilding or redesigning the Legi Market building to improve the welfare of Ponorogo Regency residents both in the economic and social fields. Legi Market was inaugurated by the Regent of Ponorogo, on August 10 2021. With the construction of this modern market, it will not disturb the traditional markets in every sub-district. The Legi market is divided into 2, namely the dry market and the wet market. To improve the facilities of the Legi Market trade and promotion center which has a larger and more numerous capacity than the previous number. Legi Market, which has a total capacity of 32,175 square meters, consists of 2 building masses. This building has 4 floors with the main mushroom being a market. There are 2,497 stalls or kiosks, or the details are 1,053 stalls and 1,444 kiosks. In this market building there are also temporary rubbish disposal facilities, as well as vehicle parking facilities which can accommodate around 1,200 motorbikes and cars.

The Concept of Sustainable Development at the Legi Market

1. Social Aspect



Figure 2. Activity conditions and interior on the 4th Floor at the Legi Market
Source: Personal Documentation, 2022.

Legi market which has good functions in terms of social and economic aspects in which it undergoes various processes of change. The Legi market is currently the best pilot market in the East Java Province area, which is a reflection of the social, economic, environmental / ecological and local cultural fields. These aspects are reflected in the various functions that exist in the modern market which contains the goals and functions of a market for the development and progress of the Ponorogo Regency area itself.



Figure 3. Retail situation and activities on the 1st floor at Legi Market
Source: Personal Documentation, 2022.

The retail outlet at Legi Market is a facility that facilitates traders who come from all over Ponorogo Regency to sell their wares, has a size of 3x3 meters and has supporting facilities in the form of a place to put goods for sale or a warehouse, and there are refrigeration facilities on each floor for fruit traders, and vegetables. At Legi Market, there are 2 types of stall placement, namely indoor kiosks which are kiosks positioned inside the building which is on one part of the roof of the Legi Market building. While the outdoor kiosk is a kiosk that is positioned on the outside of the building that is directly related to the outside of the Legi Market building.



Figure 4. Activities and the presence of retail on each floor at the Legi Market
Source: Personal Documentation, 2022.

When placing a retail store, a number of technical matters must be considered, namely keeping the goods sold fresh and not rotting quickly, airflow must be smooth so as not to cause odors on the inside of the Legi Market building, circulation access for shipping goods into and out of the market building, floors and walls. which are easy to clean caused by vegetables, fruit, or meat that fall to the floor or hit the walls of the market building, these are ways to anticipate that the quality and cleanliness of a market environment are maintained.



Figure 5. Zoning and division of blocks according to goods sold
Source: Personal Documentation, 2022.

The zoning or block arrangement at Legi Market is a form of area separation based on the goods being sold. Markets that have different levels of merchandise must have separators or groupings of block or zoning arrangements in an effort to make it easier for market visitors to find the goods they need, as well as to create a more organized spatial pattern and make it easier to keep Legi Market clean. The arrangement of the pattern of stalls or booths at the Legi Market takes into account various aspects such as access considerations for the types of goods being traded. Consideration of types of goods that cause odors and require management related to the cleanliness of merchandise, such as fish, meat, foodstuffs, vegetables and fruits.



Figure 6. Condition of parking area facilities at Legi Market
Source: Personal Documentation, 2022.

The parking area at Pasar Legi is the most important part of supporting facilities and public facilities. This parking lot is one of the facilities that aims to accommodate visitors to the Legi Market and traders selling at the Legi Market to park motorized vehicles and cars. Aims to reduce the accumulation of vehicles in the Legi Market area and in circulation access which disrupts activities in the market area, especially around the market.



Figure 7. Elevator Facility at Legi Market
Source: Personal Documentation, 2022.

There is a vertical circulation facility in the form of an elevator at Legi Market, which is used by traders and buyers to access each floor. The elevator also helps visitors or buyers with disabilities to make it easier to reach the kiosk or booth they are aiming for. This freight elevator is also used for the transportation of goods circulation by traders on the 2nd, 3rd and 4th floors.



Figure 8. Ramp facility as a link between floors at Legi Market
Source: Personal Documentation, 2022.

In this Legi Market building, the connecting circulation between floors is designed using a ramp, with a very wide and long size, measuring 2 meters wide by 13 meters long. The ramp is easy to access in reaching the floor above, and the design of the ramp is not steep, so the ramp users don't experience difficulties when passing it. RAM is not only used for human circulation, but is used for the circulation of goods by traders and buyers.



Figure 9. Escalator facility as a link between floors at Legi Market
Source: Personal Documentation, 2022.

There are also escalator facilities in the modern Legi Market building. These escalator facilities are used by visitors and buyers to reach the desired floor. This escalator makes things very easy for buyers and sellers. If this market still uses staircase circulation, it will make things difficult for activities in Legi Market, because it requires more energy and strength to transport goods or access them.



Figure 10. Guiding block for disabled pathways at Legi Market
Source: Personal Documentation, 2022.

The Legi Market area is very friendly to disabled facilities, there is a guiding block that functions as a guide for persons with disabilities. This facility is designed as an effort to provide circulation access for the blind so that they can walk independently following the guiding block to the Legi Market building.



Figure 11. Natural lighting in building at Legi Market
Source: Personal Documentation, 2022.

Lighting in the Legi Market building during the day uses natural lighting that enters through a transparent roof made of fiber roof, thereby reducing the operational costs of the market. At night the market uses artificial lighting sourced from lamps mounted on the roof ceiling.



Figure 12. Natural lighting in building at Legi Market
Source: Personal Documentation, 2022.

In the Legi Market building there is also a safety and security system, this system aims to prevent fires from occurring again in 2017. As seen in the picture above there is a safety and security system which includes a fire detection and fire alarm system which functions as passive protection for prevention. the start of the fire in the Legi Market building. For the fire protection utility system, on each floor there are hydrants and water sprinklers. It can be seen in the picture above that the water sprinkler consists of pipes connected to a sprinkler head which is installed on the building ceiling. The water sprinkler will activate automatically when it detects high heat due to a fire in the building. The sprinkler head will release water in areas where there is high heat/burnt areas. Water sprinklers are very useful in protecting the Legi Market building because they can work 24 hours for fast fire protection. This system is an initial defense in reducing the risk of damage caused by fire in the Legi Market



building, and can maintain the safety and security of market users, including traders, buyers, visitors and market managers.



Figure 13. Natural ventilation in building at Legi Market

Source: Personal Documentation, 2022.

Natural ventilation at Legi Market utilizes natural ventilation, namely through the roof ventilation system and wall ventilation, as well as ventilation from the Roof Ventilatora system. For the natural ventilation system at Legi Market, hot air moves to the top and then exits through the roof ventilation (roof gaps) and through the Roof Ventilatora. The air system enters the building through wall ventilation on each floor of the Pasar Legi building. This natural ventilation system is implemented with the aim of creating good air circulation, healthy air quality and comfort for users of the Legi Market building.



Figure 14. Drainage system area in the Legi Market area

Source: Personal Documentation, 2022.

The drainage system in the Pasar Legi area uses a closed drainage system, the liquid waste flows smoothly and is not blocked by rubbish and there are no puddles of waste water in the market area. To provide IPAL, Legi Market already has IPAL facilities, so it is hoped that with the existence of IPAL, liquid waste produced from market activities when channeled to water bodies will not cause disruption to the surrounding environmental ecosystem. The existence of an IPAL at Legi Market is very important because waste water contains pathogenic

microorganisms and dangerous materials that can pollute the environment.

Even though the drainage system has implemented a good system, the water management system has not implemented a good system that refers to the concept of sustainable development and the concept of green buildings. For water management, the Pasar Legi building already has a water meter for clean water sources, but the water conservation criteria which refer to the green building concept have not been implemented, water conservation which includes water management systems, alternative water sources, rainwater harvesting, and water management systems. landscape water consumption efficiency.



Figure 15. Adaptation of the Pasar Legi building for the future

Source: Personal Documentation, 2022.

The Legi Market building for future adaptation refers to green building concept guidelines and sustainable concepts that focus on energy management, user safety and comfort, natural lighting, natural ventilation, land use efficiency, the existence of green open space, its existence is good, however the system Water management still does not apply references to the green building concept and the concept of sustainable development, this must be evaluated by the Regional Government of Ponorogo Regency, in order to strengthen the function of green buildings in the form of sustainable Legi Market buildings that can function well for the future.

2. Economic Aspect



Figure 16. Activities that occur in the fruit and vegetable retail zoning

Source: Personal Documentation, 2022.

Productivity results in the regional agricultural sector (vegetables and fruit) represent a regional economic strength, Ponorogo Regency through an economic strength from the existence of environmental support for the activity of buying and selling agricultural products at the Legi Market. Productivity in the agricultural products of an area represents an effort and effort to create food security for the people of Ponorogo Regency, thereby increasing contribution to the Government of Ponorogo Regency.

The existence of the Legi Market building makes a positive contribution to the people of Ponorogo Regency, namely:

- Residents are satisfied with the supply of goods that have good quality.
- Goods sold by traders in the Legi Market vary greatly in goods.
- Not only providing local goods, providing imported goods.
- The service is getting better and more comfortable because the environment and situation are neat.
- The display of goods has been zoned according to type and function so that they are easy to reach and don't experience confusion when looking for them.
- The circulation to reach the destination of the kiosk/los has been facilitated by the existence of elevator and escalator facilities.

- With the establishment of the Legi Market with a modern design, the economy of the people in Ponorogo Regency is growing.



Figure 17. Fruit and vegetable cold room facilities at Legi Market

Source: Personal Documentation, 2022.

In the Legi Market building there is a cold storage facility for vegetables and fruits. This cold room is designed for merchandise conditions that require certain temperature conditions, and is used for storage of various merchandise, especially those that spoil quickly and whose conditions deteriorate quickly.

3. Cultural Aspects



Figure 18. Cultural aspects created at Legi Market

Source: Personal Documentation, 2022.



Cultural aspects have an important role in the concept of sustainable development at Legi Market. Sustainable development does not only focus on social, economic and environmental/ecological aspects, but also considers cultural values and local identity. The following is an explanation of how cultural aspects can be integrated into the concept of sustainable development at Legi Market, including:

- a. Legi Market has a history that is closely related to the lives of the people of Ponorogo Regency. So it is very important to respect and preserve the traditional values, customs and local wisdom contained in the market. This can be done by ensuring that changes or physical developments in the market do not damage or eliminate the cultural elements that have been created.
- b. Legi Songgolangit Market can act as a center for promotion and marketing of local products and regional handicrafts. In the concept of sustainable development, markets can provide support to local traders to promote traditional and innovative products that reflect the cultural identity of Ponorogo Regency. This can improve the welfare of local communities and preserve local wisdom.
- c. Legi Market can be integrated into the cultural tourism industry. Visitors can gain experience related to the activities created while at Legi Market, interact with traders, and learn about local traditions. This can create economic opportunities for local communities and at the same time introduce regional culture to visiting visitors.
- d. In the physical development of Pasar Legi, combine contextual architecture with modern elements. This not only creates an attractive aesthetic, but creates a design that is contextual to local culture, in the form of the use of facade shapes and colors in the building. The application of a building facade that

represents the characteristics and forms of art, customs and culture native to Ponorogo Regency, namely Reog art. The motif on the facade is based on peacock feathers. For the color of the building, the colors used in Reog art are red, yellow and green. So the Legi Market building is a form of representation of the original culture of Ponorogo Regency.

Legi Market can be an example of how cultural aspects can be applied in the concept of sustainable development. By respecting and strengthening local cultural identity, markets can remain relevant and sustainable in the face of changing times, while providing economic and social benefits to the people of Ponorogo Regency.

4. Environmental / Ecological Aspects



Figure 18. Scheme of the waste management system at Legi Market
Source: Personal Analysis, 2022.



Figure 19. Waste to energy innovation in the form of briquettes

Source: Personal Analysis, 2022.

Sustainable development at Legi Market in the environmental/ecological aspect, namely making innovations and breakthroughs in the form of "Waste to Energy". "Waste to Energy" is a form of innovation/sustainable concept in waste management which aims to reduce negative impacts on the environment and optimize resource utilization through the integration of technology and sustainable practices in various aspects of daily life. In the context of the market environment, the "Waste to Energy" innovation can be applied to reduce the environmental impact of trade and business activities, as well as exploit the potential of renewable energy to meet the energy needs of society.

In "Regulation of the Regent of Ponorogo Number 32 of 2018 concerning the Establishment of a Regional Technical Implementation Unit for Waste Management at the Ponorogo Regency Environmental Service", the Ponorogo Regency Government created the "Waste to Energy" innovation to solve the problem of piles of rubbish in the Pasar Legi area.

The "Waste to Energy" innovation in the market using briquettes is the use of organic waste from waste produced by the

Legi Market to produce environmentally friendly energy. Briquettes are solid fuel made from organic waste materials from waste produced by Legi Market users such as unused fruit and vegetables. The application of the "Waste to Energy" innovation with briquettes in the Pasar Legi environment has several ecological/environmental aspects including reducing the volume of waste that must be disposed of and preventing the release of methane into the atmosphere, waste that is made into briquettes contributes to reducing the use of fossil fuels and reducing the ecological impact from fuel burning activities, utilizing briquettes from organic waste can reduce market demand for natural resources such as firewood or fossil fuels, thereby helping maintain ecosystem sustainability and reducing the impact of natural resource extraction.

Innovation in processing waste into briquettes is very meaningful amidst the government's efforts to suppress climate change by reducing greenhouse gas production and as an effort to reduce CO₂ gas. Reusing waste processing is one way to create renewable energy that can replace coal briquettes. If you see a pile of rubbish, it



can be processed into briquettes which can replace coal using appropriate technology in a simple way. The success of the "Waste to Energy" innovation carried out by the Regency Government in Ponorogo will become an example of sustainable waste management so that it will be followed by all Regencies in East Java. The problem of mounting waste can be resolved and provide economic benefits for the region. The application of the "Waste to Energy" innovation with briquettes is a clear example of how sustainable practices can be integrated into daily activities to protect the environment.



Figure 20. Fruit and vegetable cold room facilities at Legi Market
Source: Personal Documentation, 2022.

In the process of rebuilding Legi Market in 2020, the concept of green buildings was carried out, which refers to PUPR Ministerial Regulation Number 02/PRT/M/2015 concerning Green Buildings. During the construction period, the contractor carries out construction that prioritizes environmentally friendly behavior, including maintaining environmentally friendly materials, managing construction waste, and conserving water and energy. The green building concept at Legi Market was built by the PUPR Ministry to create less cost operation and maintenance, so that in the future it does not burden the Regional Government and traders.

In the Legi Market construction process, land use efficiency is also implemented. It can be seen in the picture above that there is green open space surrounding the Legi Market building. This aims to reduce building density and increase vegetation, so that it can help reduce air pollution and create better air circulation. both in the Pasar Legi area.

The Legi Market building has also implemented vertical space utilization which aims to accommodate the space needs used by market users, including the activities of sellers, buyers and market managers.

Thus, land use efficiency can have a positive impact on environmental aspects, especially the existence of green open space, maintaining a balance between development and preserving the environment around Legi Market.

CONCLUSION AND SUGGESTION

1. Conclusion

From the analysis that has been carried out, conclusions can be drawn regarding the concept of sustainable development at the Legi Songgolangit Market which aims to improve the quality of the Legi Market for the people of Ponorogo. With a proper physical condition of the building and complete supporting facilities, it can provide benefits for social, cultural, economic and environmental/ecological aspects. In implementing several aspects of sustainable development in the Legi Market building which are useful in meeting the needs of Legi Market as follows:

a. Environmental/Ecological Aspects

The innovation in energy efficiency and sustainable waste management in the form of "Waste to Energy", is expected to be a solution to ecological/environmental problems related to economic and social activities created at Legi Market.

b. Cultural Aspects

The cultural aspects contained in Legi Market are in the form of local cultural heritage and traditional values aimed at realizing continuity between cultural preservation and the development of Legi Market. The cultural aspects that appear at Legi Market are in the form of a promotion and marketing center for local products and typical Ponorogo handicrafts, local traditional values in the form of mutual cooperation activities and social interactions which are still maintained today, as well as combining contextual architecture with local culture combined with modern elements found on building facades, and at certain times such as the month of Muharram, there are often Reog art performance. The cultural aspects found in Legi Market can trigger the development of cultural tourism and open up economic opportunities for the community.

c. Social Aspects

By implementing the concept of sustainable development, Legi Market can become a center for useful social activities. The social aspect is directly connected to the

development of Legi Market facilities, in the form of rebuilding Legi Market, increasing the number of kiosks, as well as adding other supporting facilities which can create job opportunities for the people of Ponorogo, either as traders, managers or other supporting staff. so that it can increase household income and stimulate regional economic activity. The construction of Legi Market can create a better environment, both in terms of cleanliness, health and security. Sustainable development of Legi Market can provide better facilities for traders and visitors, including adequate infrastructure, good accessibility systems and comfortable areas. Sustainable markets can also be a forum for micro, small and medium enterprises (MSMEs) to promote local products. So that it indirectly contributes to improving the quality of life of the community.

d. Economic Aspects

Having stalls selling local agricultural products in the form of vegetables and fruit can help with promotion and marketing. So that it can increase the attractiveness and demand for local products. Legi Market as a trading center in Ponorogo Regency provides access for farmers and traders to sell their products to consumers from various regions. This can open up opportunities for market expansion and increase sales.

Sustainable development is a concept that must be interconnected between economic, environmental/ecological, social and cultural principles whose main focus is not only on the initial concept, but also focuses on environmental sustainability and balance. There needs to be direct intervention from the Ponorogo Regency Government, both micro and macro scales, regarding the implementation of the concept of sustainable development. With the existence of policies from the Ponorogo Regency Government regarding sustainable development which aims to create a Legi Market building that is beneficial for the people of Ponorogo for the current and future generations.

2. Conclusion

a. Environmental/Ecological Aspects

- There is a need for sanitation management that adopts sustainable sanitation technology, in the form of waste management and sanitation systems that save water use.
- It is necessary to apply renewable energy technology, in the form of biomass energy or solar panels, to provide energy

for the Legi Market. So it can help reduce dependence on conventional energy sources and reduce negative environmental impacts.

- Efficient water management is needed, such as the use of low-tech bathrooms and the need for a rainwater collection system so as to reduce water consumption at Legi Market.

b. Cultural Aspects

- There needs to be events in the form of local traditional arts performances in the form of traditional dance and music, such as Reog dance performances or gamelan performances, which are held periodically. This cultural activity can be an attraction for visitors and provide an opportunity for local artists to show their work.
- There is a need for cultural exhibitions that display handicrafts, painting, historical photos and cultural artifacts. The aim of holding this exhibition is to provide deeper insight into the rich culture of Ponorogo Regency to the general public.
- There is a need for a cultural festival which aims to hold annual and monthly cultural festivals at Legi Market. Activities at the cultural festival include art performances, local specialties and cultural activities. By holding a cultural festival, it will bring the community and visitors together to celebrate local cultural heritage.
- There needs to be a special area in the form of a cultural promotion space that functions as a space for local artists to display their works, as a mini library to display books about the history of Ponorogo Regency, and arts and culture information that can be accessed by visitors to Legi Market.

With suggestions related to cultural aspects at Legi Market in the form of carrying out artistic activities, the market will not only be a place for shopping, but also a center for cultural interaction, thereby providing experiences for visitors and the general public. These activities will support cultural preservation, increasing awareness of the importance of preserving existing local cultural heritage.

c. Social Aspects

- There is a need to provide facilities for local community meetings in the form of open spaces or halls at Legi Market



which function as meetings, discussions or social events, this will be a place for the community to interact and gather.

- There is a need to provide a safe and useful children's play area at Legi Market. this will help visiting parents shop while providing a place to play for their children.
- Hold a community empowerment program in the form of social and economic skills training. This training can focus on developing work skills or entrepreneurship, so that it will support the social and economic aspects of Legi Market.

By carrying out social activities and developing supporting facilities, Legi Market will become a center for social activities that are beneficial to the community. This will increase social interaction, strengthen community ties, and provide a learning platform for the community.

d. Economic Aspects

- Organizing market activities for MSMEs and local products by providing a special zone at Legi Market to accommodate them. So that it can help MSMEs promote their products to the visiting public, and provide opportunities for local MSMEs to develop even better.
- Organizing regular thematic exhibitions and bazaars, for example local culinary bazaars, organic agricultural product bazaars, or handicraft bazaars typical of Ponorogo Regency. This will increase the variety of products offered at Legi Market, and will attract more visitors.
- Providing training programs for individuals who want to start a business or expand their business at Pasar Legi. This activity includes business management training and goods marketing.
- Providing online market platform facilitation for traders selling at Legi Market. This facility will allow sellers to reach customers within the Ponorogo Regency area and will increase sales potential.

Through the implementation of these economic activities, Legi Market will become a diverse trade center, help encourage local economic growth, and provide opportunities and support for local business actors to develop more rapidly.

By optimizing the suggestions on the four aspects explained above, we can create an efficient, healthy, safe and comfortable environment so that the concept of

sustainable development can be realized in the Legi Market building in Ponorogo Regency.

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