

LANDSCAPE PLANNING FOR THE SILEME-LEME PANORAMA TOURIST AREA IN POLLUNG SUBDISTRICT, HUMBANG HASUNDUTAN REGENCY

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Abstract: *Panorama Sileme-Leme is a tourist destination in Humbang Hasundutan Regency, specifically in Huta Sileme-Leme, Parsingguran 2 Village, Pollung District, located at an altitude of approximately 1,600 meters above sea level. The beautiful natural panorama with Lake Toba as its backdrop and surrounded by expansive plantations makes it an ideal recreational spot. However, the supporting facilities in this area are insufficient to accommodate various recreational activities that could potentially be conducted there. Therefore, landscape planning and the provision of tourist facilities are necessary to make the area more attractive to visitors. The initial idea behind this concept is to plan the Sileme-leme Panorama area as an attractive tourism destination equipped with various supporting facilities for tourism activities. However, because it is located in a hilly area prone to landslides, the concept of a pine forest tourism area was implemented. In addition to enhancing aesthetics and visitor comfort, its primary function is to minimize landslides because pine trees are known as effective soil-stabilizing vegetation. In addition, the pine forest tourism landscape can also have interesting spots such as tall, shady pine trees, restaurants or cafes with views of the pine forest, and also play areas for children. This helps enhance the visitor's tourism experience and makes them feel close to nature and the beauty of the pine forest. The planning of the Sileme-leme Panorama Area uses a semi-pine forest concept supplemented with various tourism facilities. The implementation of this concept has been considered through various analyses conducted previously. With the implementation of the semi-pine forest concept, it is hoped that the natural potential will not change significantly, and the preservation of nature in this area will remain intact. This planning is expected to make Panorama Sileme-leme a more developed tourist attraction and more appealing to visitors. Additionally, this planning is anticipated to boost the local community's economy.*

Keywords: *Panorama Sileme-leme, Planning, Tourism Landscape, Tourism Facilities*

INTRODUCTION

Tourism is one of the strategic sectors in regional development because it can drive economic growth, improve the welfare of local communities, and strengthen regional identity and competitiveness. Humbang Hasundutan Regency, North Sumatra Province, has considerable potential for nature tourism, particularly in the highlands located within the strategic Lake Toba tourism area. One of the areas with such potential is Pollung District, which is geographically located on the Bukit Barisan mountain range with distinctive natural landscapes and high-value visual panoramas.

Sileme-Leme Panorama is a natural tourist destination located in Huta Sileme-Leme, Parsingguran II Village, Pollung District, Humbang Hasundutan Regency, at an altitude of about 1,600 meters above sea level. This area's main attractions are the panorama of Lake Toba, rolling hills, and unspoiled rural landscapes. These visual advantages make the Sileme-Leme Panorama a potential destination for nature and recreational tourism, such as panorama tours, camping, family tourism, photography, and nature-based recreational activities.

However, the potential of the Sileme-Leme Panorama landscape has not been matched by the availability of adequate facilities and area management. Field

observations show that tourism support facilities in this area are still very limited, such as a lack of sanitation facilities, unorganized parking areas, and a lack of recreational facilities and visitor activity spaces. These conditions have resulted in low tourist visitation rates and suboptimal utilization of the area as a leading tourist destination in Pollung Subdistrict.

In addition to facility issues, the physical condition of the area, which consists of hills with a certain degree of slope, also requires a landscape planning approach that takes into account safety, ecological, and environmental sustainability aspects. This area is located in a region prone to landslides, so landscape planning must not only focus on aesthetics and tourism functions, but also on land conservation and environmental stability. Therefore, a vegetation-based landscape planning approach, such as the semi-pine forest concept, is relevant to be applied as an effort to control erosion, retain soil, and improve the visual quality of the area.

Based on these issues and potential, an integrated and sustainable tourism landscape plan is needed to optimize the utilization of the Panorama Sileme-Leme area. This plan is expected to accommodate the space and tourism activity needs, improve visitor comfort and appeal, and maintain the preservation of the natural environment. In addition, the development of a well-planned tourism area is also expected to have a positive impact on the local economy through increased tourism activities and community involvement in area management.

Thus, this study aims to formulate a concept and tourism landscape plan for the Panorama Sileme-Leme area that is in line with the site characteristics, natural potential, and sustainability principles, so that this area can develop into an attractive, safe, and competitive natural tourism destination.

LITERATURE REVIEW

1. Tourism Landscape Planning

Tourism landscape planning is the process of planning and managing open spaces with the aim of optimizing the natural potential, visual aesthetics, and socio-economic functions of a tourist area. This planning is not only oriented towards visual beauty, but also considers aspects of comfort, accessibility, safety, and environmental sustainability. A well-planned tourism landscape can create a positive spatial experience for visitors while maintaining the balance of the natural ecosystem.

In the context of landscape architecture, tourism area planning involves the integrated arrangement of softscape and hardscape elements, such as vegetation, landforms, circulation, supporting facilities, and supporting structures. The main principles in tourism landscape planning are suitability with the site's character, utilization of visual potential, and minimization of negative impacts on the natural environment.

2. The Concept of Sustainable Tourism Landscapes

Sustainable tourism landscapes emphasize a balance between the needs of tourists, the interests of local communities, and the conservation of natural resources. This concept aims to ensure that tourism activities do not cause environmental degradation and continue to provide long-term benefits. A sustainable approach to tourism landscape planning involves protecting ecologically sensitive areas, controlling land use, and utilizing natural resources wisely.

In the development of natural tourism areas, sustainability is also related to the involvement of local communities as part of the tourism management system. This involvement can increase a sense of ownership of the tourism area while encouraging economic improvement for the surrounding community.

3. Panorama as a Tourist Attraction

Panorama is one of the main elements in natural tourist landscapes that has high visual value. In landscape studies, panorama is understood as a wide and open visual expanse, formed from a combination of topography, vegetation, water bodies, and man-made elements. A well-managed panorama can become the main attraction of a tourist destination because it provides a strong and memorable visual experience for visitors.

In landscape planning, panorama analysis is conducted to determine viewpoints, vista directions, and elements that need to be preserved or enhanced. Proper panorama management can improve the aesthetic quality of an area while strengthening the visual identity of a tourist destination.

4. Pine Forests as Elements of the Tourist Landscape

Pine forests are a type of natural landscape that are often used as natural tourist attractions due to their distinctive visual characteristics, cool air, and ecological functions. Pine vegetation has a strong root system, which plays an important role in maintaining soil stability and reducing the risk of erosion and landslides, especially in hilly areas.

In the context of tourism landscapes, pine forests serve not only as aesthetic elements but also as conservation elements. The development of pine forest-based tourism allows for the creation of natural recreational spaces that maintain environmental balance, such as camping areas, walking trails, and recreational facilities that blend in with nature.

5. Tourism Facilities and Visitor Experience

Tourism facilities are an important component in supporting visitor activities and comfort. The availability of facilities such as parking areas, toilets, gazebos, circulation paths, and recreational activity spaces directly affects the quality of the tourism experience. Well-planned facilities must be tailored to the capacity of the area, the character of the landscape, and the needs of visitors.

A quality tourism experience is created through the integration of natural attractions, supporting facilities, and good area management. Therefore, tourism facility planning must consider functional, aesthetic, and sustainability aspects so as not to damage the natural character of the area.

6. Conceptual Framework for Tourism Landscape Planning

Based on literature reviews, ideal tourism landscape planning should be carried out through stages of site potential and constraint analysis, concept formulation, spatial program development, and landscape element design. This framework enables the creation of landscape designs that are responsive to the physical conditions of the area, user needs, and tourism development objectives.

This approach forms the basis for the landscape planning of Panorama Sileme-Leme, integrating the potential of the natural panorama, the concept of a semi-pine forest, and the provision of sustainable and environmentally conscious tourism facilities.

METHODS

This study uses a descriptive qualitative approach with the landscape planning method. This approach aims to understand the existing conditions of the area, identify the potential and problems of the site, and formulate a landscape planning concept that is in line with the physical and environmental characteristics of the Panorama Sileme-Leme area.

1. Planning Map

The research was conducted in the Panorama Sileme-Leme area, located in

Parsingguran II Village, Pollung District, Humbang Hasundutan Regency, North Sumatra Province. This area is located at an altitude of $\pm 1,600$ meters above sea level and has a hilly topography. The research was carried out through field observations, data collection, and planning analysis within a predetermined research period.

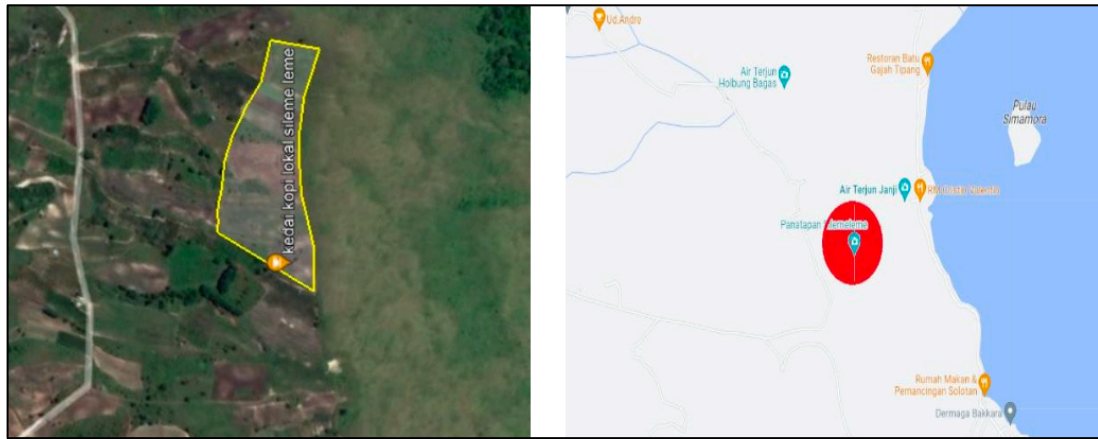


Figure 1. Planning Site Location

2. Data Types and Sources

a. Primary Data, including:

- Direct observation of the physical condition of the site, including topography, vegetation, accessibility, circulation, utilities, and existing facilities;
- Visual documentation in the form of photographs and sketches of field conditions;
- Informal interviews with managers and communities around the tourist area to obtain information related to tourist activities and the condition of area management.

b. Secondary Data, including:

- Map data and regional planning documents;
- Literature related to tourism landscape planning, sustainable tourism, and pine forests;
- Regulations and policies related to tourism and the development of the Lake Toba area;
- Journal studies and previous research relevant to the research topic.

3. Data Collection Techniques

Data collection techniques were carried out through:

- Field observations, to identify the actual conditions of the area and the potential of the landscape;
- Literature studies, to obtain a theoretical basis and concepts for tourism landscape planning;
- Interviews, to obtain an overview of the perceptions and needs of the community and users of the area;
- Documentation, to support visual analysis and design.

4. Planning Stages

- The planning stages in this study include:
- Data inventory and identification of existing conditions in the area;

- Analysis of physical, environmental, and social data;
- Formulation of a pine forest-based tourism landscape planning concept;
- Preparation of a spatial program and zoning for the area;
- Design of landscape elements and tourism facilities.

RESULTS AND DISCUSSION

Field observations show that the Sileme-Leme Panorama Area has very strong natural landscape potential, characterized by panoramic views of Lake Toba, green hills, and unspoiled rural landscapes. This area is located at an altitude of $\pm 1,600$ meters above sea level with hilly topography and varying land slopes. These conditions provide high visual value, but at the same time require special attention in landscape planning, especially in terms of safety and land conservation.

Existing facilities in this area are still very limited. There are several simple gazebos and one public toilet, while the parking area is not well organized, allowing visitors' vehicles to enter the main viewing area. This condition creates a visually untidy impression and reduces the aesthetic quality of the landscape. In addition, the lack of supporting facilities has an impact on the low intensity and duration of tourist visits.



Figure 2. Analysis of Site Potential and Constraints

Based on site analysis, the main potential of the Panorama Sileme-Leme area lies in its visual panorama, cool air, and peaceful environment far from urban activities. This area also has the potential to be developed as a family tourist destination, nature tourism, and camping activities. Another advantage is the area's proximity to regional crossroads, making it relatively easy to access for local tourists.

However, the analysis also revealed several major issues, including limited infrastructure, the absence of a clear zoning system, and the potential risk of landslides due to the slope of the land. In addition, suboptimal spatial management has resulted in sporadic tourism activities without clear planning. These issues highlight the need for

an integrated landscape planning approach based on site characteristics.

Visual analysis shows that Panorama Sileme-Leme has several potential viewpoints that directly overlook Lake Toba, Tipang Village, Bakkara Village, and the surrounding small islands. These viewpoints are key assets of the area that need to be preserved and improved through landscape planning.

However, in their current condition, some of the viewpoints have not been optimally facilitated and are not equipped with supporting elements such as footpaths, seating, or slope edge protection. Therefore, in landscape planning, these viewpoints are designated as the main space for tourist activities with a layout that takes into account safety, comfort, and visual quality.

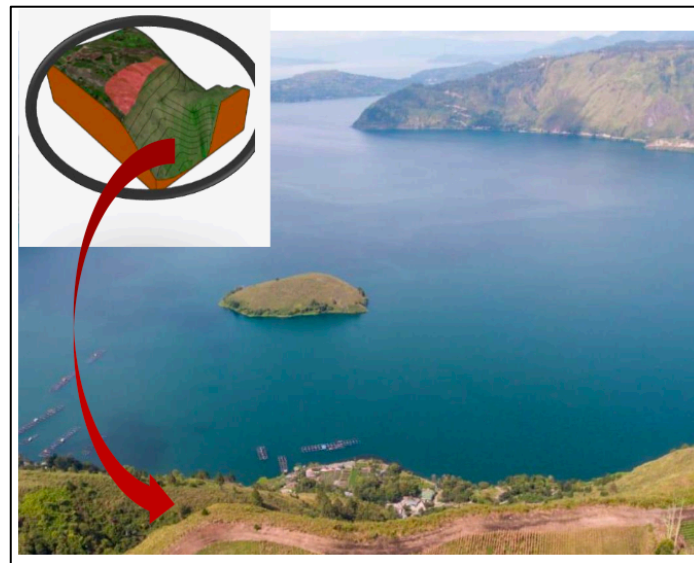


Figure 3. Analysis of Natural Features

The results of site analysis and literature review produced the concept of a semi-pine forest tourism landscape as the main approach to planning the area. This concept was chosen based on the hilly topography of the area and the need for vegetation with strong root systems to reduce the potential for erosion and landslides. Pine vegetation serves as a conservation element as well as creating a cool and natural atmosphere for nature tourism.

The semi-pine forest concept allows for the integration of natural elements and tourism facilities without eliminating the original character of the landscape. Landscape elements are designed to blend in with the contours of the land and existing vegetation, so that changes to natural conditions can be minimized.



Figure 4. Concept Analysis

Based on the results of activity and space requirement analysis, the Panorama Sileme-Leme area is divided into several zones, namely the entrance zone, tourist activity zone, panorama zone, family recreation zone, and conservation zone. This zoning aims to regulate the intensity of tourist activities so as not to disturb the environmental balance.

The proposed spatial program includes a central parking area, pedestrian circulation paths, gazebos, observation towers, children's play areas, camping areas, and supporting facilities such as toilets and restaurants. The placement of facilities is designed according to the principles of spatial efficiency, safety, and visual integration with the surrounding landscape.



Figure 5. Entrance Area Concept

The Panorama Sileme-Leme tourism landscape plan is expected to improve the quality of the area as a well-managed natural tourism destination. Clear zoning and facility layout can enhance visitor comfort and experience, while preserving the environment. In addition, planned tourism development has the potential to boost the

local economy through the provision of tourism services and facilities.



Figure 6. Planning Perspective

With a sustainable landscape approach, the Panorama Sileme-Leme area can develop as an alternative tourist destination in the Lake Toba area that has a strong visual identity, is safe, and environmentally friendly.

CONCLUSION

Based on the results of research and discussion, it can be concluded that the Sileme-Leme Panorama Area in Pollung District, Humbang Hasundutan Regency, has high natural landscape potential as a tourist destination, especially in terms of the visual panorama of Lake Toba, the natural environment, and the cool mountain climate. This potential is the main asset in the development of nature-based and landscape-based tourist areas.

However, the existing conditions of the area show that the utilization of this potential has not been optimal due to limited tourism facilities, the absence of planned spatial zoning, and a lack of landscape planning that takes into account safety and environmental sustainability aspects. The hilly topography of the area also requires a landscape planning approach that is adaptive to the physical conditions of the site.

The tourism landscape planning with a semi-pine forest concept proposed in this study is considered capable of addressing these issues. This concept not only serves as an aesthetic approach but also as an environmental conservation effort to reduce the risk of erosion and landslides. The zoning division and integrated spatial program arrangement are expected to enhance visitor comfort, safety, and experience quality while preserving the area's natural character.

RECOMMENDATIONS

Based on the results of the study, several recommendations can be made as follows:

1. Local governments and area managers are expected to use the results of this landscape planning as a starting point for the development of the Sileme-Leme Panorama Area as a sustainably managed natural tourist destination.
2. The development of tourist facilities needs to be carried out in stages, taking into account the carrying capacity of the environment and the topographical characteristics of the area, so as not to cause damage to the landscape or pose a

safety risk to visitors.

3. The involvement of local communities in the management and development of tourist areas needs to be increased so that the economic benefits of tourism can be felt directly and encourage the sustainability of area management.
4. Further research is recommended to examine more in-depth technical aspects, such as analysis of the carrying capacity of the area, tourism economic studies, and the use of spatial technology (GIS) to strengthen tourism landscape planning.

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