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Spatial Planning and Urban Open Space Utilization in Banda Aceh: A Policy Implementation Review

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Abstract
The low effectiveness of spatial planning policy implementation is one of the key urban planning issues in Indonesia, particularly in Banda Aceh. This study examines the implementation of regional spatial planning (RTRW) policy in the utilization of public open spaces in Banda Aceh's city center. Public open spaces play a critical role in urban environments, providing ecological, social, and recreational benefits. However, the success of spatial planning policies depends heavily on their realization on the ground. This research employs a qualitative approach, combining field observations with document analysis to assess whether the public open space components outlined in Banda Aceh's RTRW are being implemented. The findings reveal a notable discrepancy between planning and execution. Several public areas designated as open spaces in the RTRW remain undeveloped or neglected, due to limited government intervention and inadequate infrastructure development. This disconnect suggests issues in policy enforcement, budgeting, or coordination among relevant stakeholders. As a result, the potential of these spaces to contribute to urban sustainability and community well-being remains underutilized. The study highlights the importance of more consistent monitoring, cross-sector collaboration, and community engagement to ensure that spatial planning policies are effectively translated into functional and accessible public open spaces. Strengthening the implementation process could play a significant role in enhancing the urban quality of life in Banda Aceh.
Keywords: *banda aceh, policy implementation, public open space, rtrw, urban planning*

Abstrak
Rendahnya efektivitas implementasi kebijakan tata ruang merupakan salah satu permasalahan perencanaan kota di Indonesia, khususnya Banda Aceh. Penelitian ini mengkaji implementasi kebijakan Rencana Tata Ruang Wilayah (RTRW) dalam pemanfaatan ruang terbuka publik di kawasan pusat Kota Banda Aceh. Ruang terbuka publik memiliki peran penting dalam lingkungan perkotaan karena memberikan manfaat ekologis, sosial, dan rekreasi. Namun, keberhasilan kebijakan tata ruang sangat bergantung pada realisasinya di lapangan. Penelitian ini menggunakan pendekatan kualitatif dengan menggabungkan observasi lapangan dan analisis dokumen untuk menilai sejauh mana komponen ruang terbuka publik yang tercantum dalam RTRW Banda Aceh telah diimplementasikan. Hasil penelitian menunjukkan adanya kesenjangan yang mencolok antara perencanaan dan pelaksanaan. Beberapa area publik yang telah ditetapkan sebagai ruang terbuka dalam RTRW masih belum dikembangkan atau terabaikan, dengan intervensi pemerintah dan pembangunan infrastruktur yang minim. Ketidaksesuaian ini mengindikasikan adanya permasalahan dalam penegakan kebijakan, penganggaran, atau koordinasi antar pemangku kepentingan. Akibatnya, potensi ruang terbuka publik untuk berkontribusi terhadap keberlanjutan kota dan kesejahteraan masyarakat belum dimanfaatkan secara optimal. Studi ini menekankan pentingnya pemantauan yang lebih konsisten, kolaborasi lintas sektor, dan keterlibatan masyarakat guna memastikan bahwa kebijakan tata ruang dapat diterjemahkan secara efektif menjadi ruang terbuka publik yang fungsional dan dapat diakses. Penguatan proses implementasi berpotensi memberikan kontribusi signifikan dalam meningkatkan kualitas hidup perkotaan di Banda Aceh.
Kata Kunci: *banda aceh, implementasi kebijakan, ruang terbuka publik, rtrw, perencanaan kota*

1. Introduction

Public open spaces are vital components of urban environments, offering not only recreational areas but also contributing to environmental quality, social interaction, and urban aesthetics. Their presence and accessibility are strongly linked to the quality of urban life and the sustainability of cities [1]. Public open spaces play multifaceted roles—physical, social, psychological, economic, and political that carry varied meanings for different individuals. These spaces are not merely physical settings but also symbolic

environments where people construct identity, form relationships, and experience belonging [2]. Furthermore, culture significantly influences the development of place attachment, and this connection is not limited solely to urban settings [3].

In Indonesia, the importance of public open space has been increasingly recognized in regional spatial planning policies, known as Rencana Tata Ruang Wilayah (RTRW), which serve as legal frameworks for directing land use and development priorities at the city and provincial levels [4]. Effectively managing green open spaces is essential to guarantee that all city residents can access and benefit from them. In this regard, how the budget is allocated serves as a vital indicator of the city's dedication to its upkeep and care [5].

Banda Aceh, as the capital of Aceh Province, has undergone significant urban transformation, particularly after the 2004 tsunami. The city's RTRW was developed to guide post-disaster reconstruction and long-term spatial development, including the provision and enhancement of public open spaces. Despite this policy framework, there appears to be a disconnect between planning and on-the-ground implementation. Several areas designated for public open space in the RTRW remain underdeveloped or unused, raising concerns about the effectiveness of spatial policy implementation.

The successful implementation of spatial planning depends on various factors, including institutional coordination, community participation, adequate funding, and political will [6]. When these elements are lacking, policies often fail to achieve their intended outcomes, resulting in underutilized or neglected urban spaces. Implementation of the RTRW policy involves translating the spatial plan into real actions, thereby regulating the use of regional space in a sustainable manner. This implementation involves various parties and covers various aspects, starting from the preparation of strategies for realizing spatial structures, activity centers, to infrastructure systems [7].

This study aims to review the implementation of Banda Aceh's spatial planning policy concerning the utilization of public open spaces. By combining field observations with document analysis, the research identifies the extent to which the RTRW's public space provisions are reflected in actual land use. The findings are expected to shed light on the challenges of policy execution in urban planning and provide insights into how Banda Aceh—and similar cities—can better bridge the gap between planning and practice.

2. Material and Methods

Banda Aceh's City Center

Baiturrahman District is one of the administrative districts (kecamatan) in the city of Banda Aceh, located at the city's center. It shares borders with Kuta Raja District to the north, Banda Raya District to the south, Lueng Bata District to the east, and Meuraxa District to the west. Administratively, Baiturrahman District comprises two subdistricts (mukim): Mukim Putroe Phang and Mukim Baiturrahman, which are further divided into ten villages (gampong). The total population of Baiturrahman District is 32,506, consisting of 16,307 males and 16,199 females. It has the highest population density in Banda Aceh, with 7.51 persons per square kilometer [8].

To the east of the planning area lies Kuta Alam District, which is bordered by the Malacca Strait to the north, Baiturrahman District to the south, Syiah Kuala District to the east, and Kuta Raja District to the west. Administratively, Kuta Alam consists of 11 villages (gampong), grouped into two subdistricts: Mukim Lam Kuta and Mukim Kuta Alam. Kuta Alam has a total population of 42,691, comprising 21,208 males and 21,483 females. Compared to Baiturrahman, Kuta Alam has a lower population density, at 5.34 persons per square kilometer [8].

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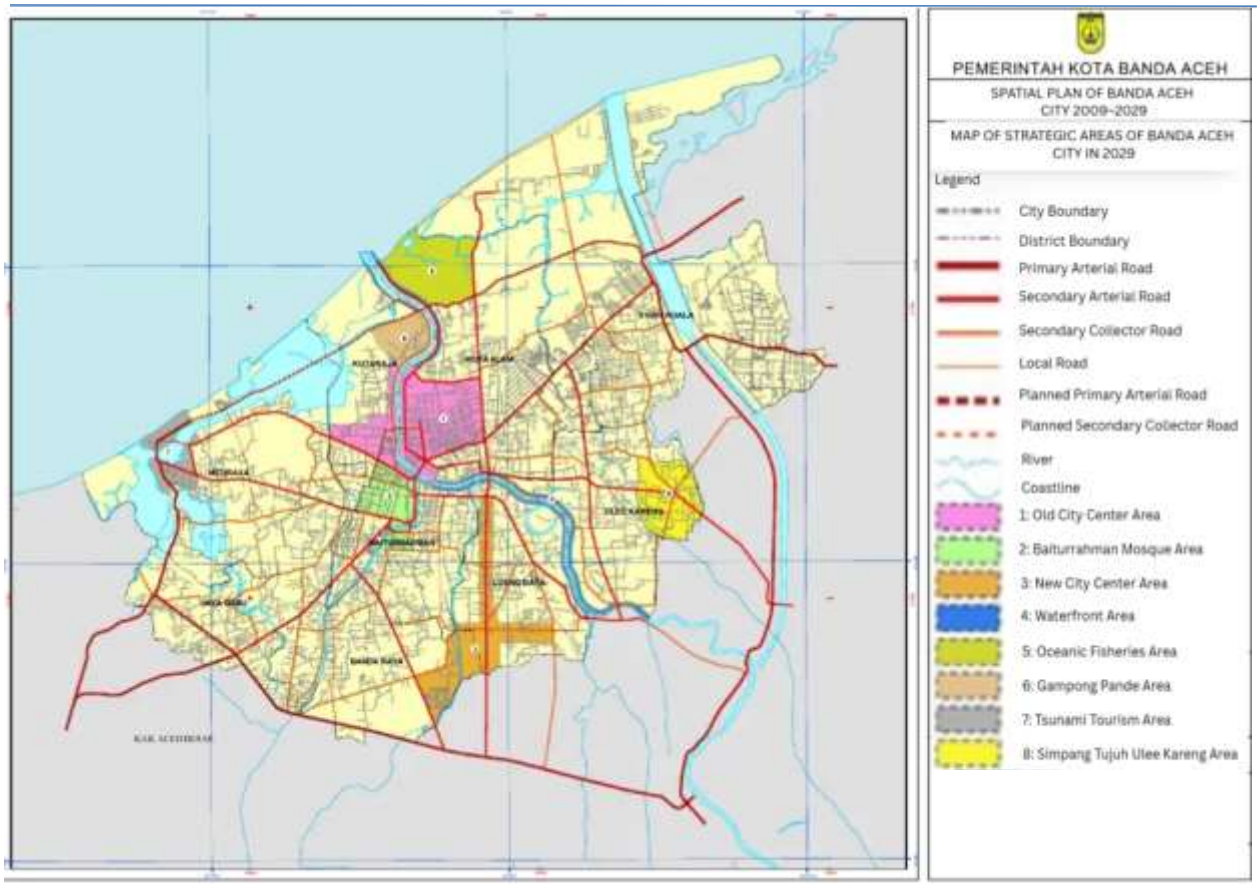

Fig. 1: Banda Aceh's Strategic Area Map
Source: RTRW Kota Banda Aceh 2009-2029

Banda Aceh Cultural Heritage Site

Urban historical heritage areas are essential repositories of a city's cultural and historical identity, contributing significantly to the transmission of cultural values and the advancement of urban development. Safeguarding and enhancing these areas are crucial for maintaining the unique cultural features and architectural heritage that define the character and continuity of urban environments [9]. Cultural heritage zones are areas designated for the preservation of environments, buildings, and objects of historical value. In the city of Banda Aceh, several locations have been officially designated as cultural heritage zones [10]. These include the Baiturrahman Grand Mosque area, the Aceh Museum complex, Gunongan, Taman Putroe Phang, the Governor's Residence (Pendopo), Kerkhoff, Pinto Khop, the tomb of Syiah Kuala, the tomb of Sultan Iskandar Muda, and the Kandang XII cemetery. In addition, several sites established to commemorate the 2004 tsunami disaster have also been recognized as cultural heritage zones. These include the Ulee Lheue Tsunami Heritage area, the Tsunami Museum, the PLTD Apung site, the boat on top of a house in Lampulo, and various mass grave locations.

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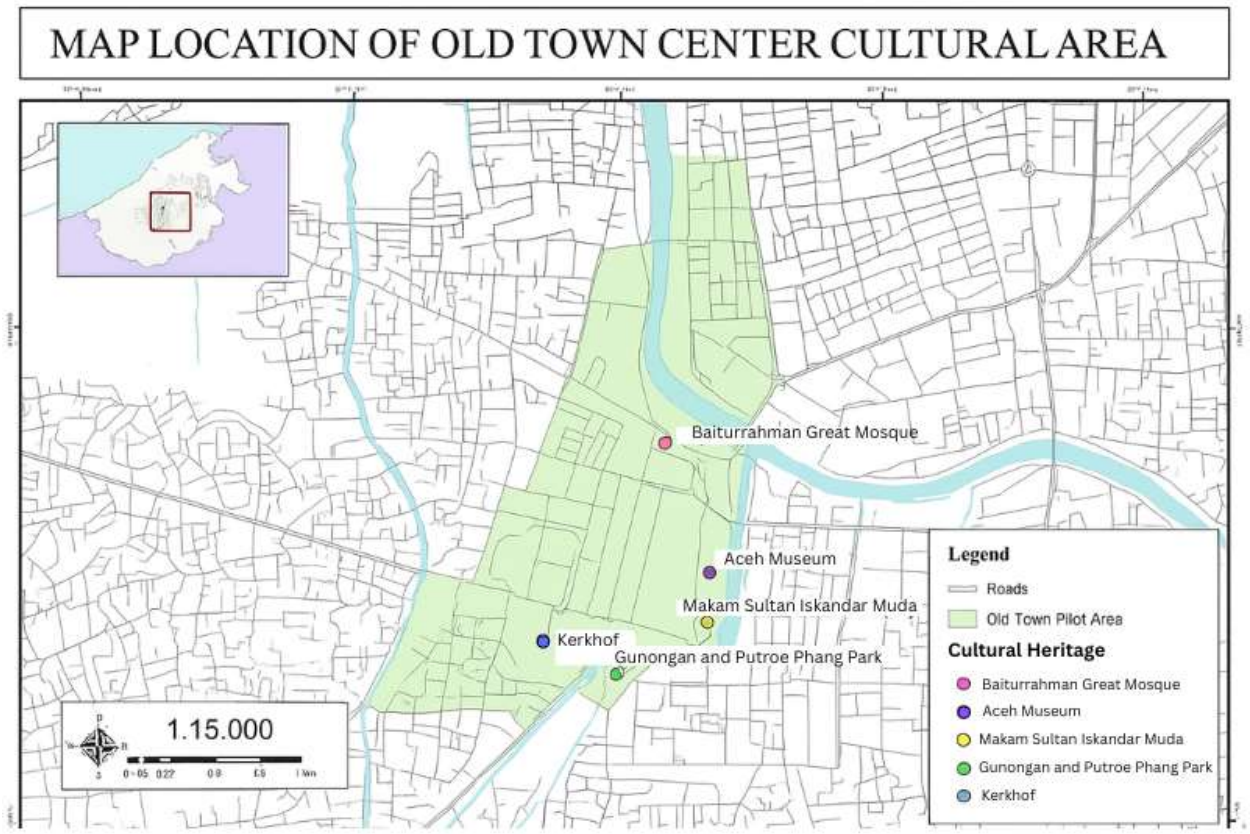

Fig. 2: Map of Cultural Heritage Locations
Source: Banda Aceh City Spatial Plan (RTRW) 2009–2029

According to the Banda Aceh City Spatial Plan (RTRW), the planning of cultural heritage areas focuses particularly on the Old City Central Planning Area. This area includes the Baiturrahman Grand Mosque, the Aceh Museum complex, Gunongan and Taman Putroe Phang, the Governor's Residence, Pinto Khop, the Tsunami Museum, Kerkhoff, and the tomb of Sultan Iskandar Muda. These areas comprise the historical core of the city, showcasing architectural elements from the Aceh Sultanate and key tsunami memorial sites. Together, they represent a strategic zone for spatial planning and cultural heritage preservation in Banda Aceh.

This study employed a qualitative descriptive approach to examine the implementation of regional spatial planning (RTRW) policy in the utilization of public open spaces in Banda Aceh, with a particular focus on Baiturrahman and Kuta Alam Districts. These districts were selected due to their high population densities and urban centrality, which make them critical areas for evaluating spatial planning outcomes.
Data collection was conducted through two primary methods:

1. Field observations, aimed at identifying the current physical conditions and usage patterns of designated public open spaces based on the RTRW document.
2. Document analysis, involving the review of Banda Aceh's RTRW documents (2024), related policy regulations, and planning reports to assess alignment between planning and actual land use.

The data were analyzed using content analysis techniques, focusing on the extent of conformity between the planned spatial functions and their physical realization. Inconsistencies, infrastructure conditions, and stakeholder roles were also examined to understand the underlying causes of implementation gaps.

3. Results and Discussion

This study explored the alignment between Banda Aceh's Regional Spatial Plan (RTRW) and the actual conditions of public open spaces and cultural heritage areas, with a particular focus on Baiturrahman and Kuta Alam districts. As identified in the introduction, these areas hold significant urban and historical value, housing both modern public infrastructure and designated cultural heritage sites. Despite the presence of policy frameworks and spatial designations within the RTRW (2009–2029), concerns persist regarding the consistency of policy implementation at the local level.

To better understand the practical outcomes of these spatial plans, qualitative methods including field observations and document analysis, were employed. The goal was to assess whether the open space and cultural heritage components outlined in planning documents are being realized on the ground, and to what extent these areas contribute to the city's sustainability, livability, and cultural identity.

Green Open Space

According to Law No. 26 of 2007, open space consists of green open space (RTH) and non-green open space. Green open space is further divided into public (20%) and private (10%) categories. In the city of Banda Aceh, the provision of green open spaces is intended to support ecological, economic, aesthetic, and other specific functions, and such spaces are not to be converted into built-up areas.

The green open spaces planned for development in Banda Aceh include the following [11]:

- Urban parks (RTH Taman Kota), to be developed in the Old City Center (Pusat Kota Lama), the New City Center (Pusat Kota Baru), Keutapang Sub-Center, Ulee Kareng Sub-Center, and Neighborhood Unit Centers (Pusat Unit Lingkungan);
- Green open spaces designated as tourism zones and public areas in Lambhuk, Ulee Lheue, Lambung, and Deah Glumpang/Blang Oi;
- Green open spaces in Blang Padang Field, Neusu Field, Lambhuk Field, Blang Cut Field, SMEP Peunayong Field, and Taman Sari;
- Green open space at the intersection of Jalan Teuku Iskandar Muda (adjacent to the Tsunami Museum); and
- The Taman Putroe Phang green open space area.

These spaces are planned to enhance the city's environmental quality while serving as functional, recreational, and cultural assets for the community.

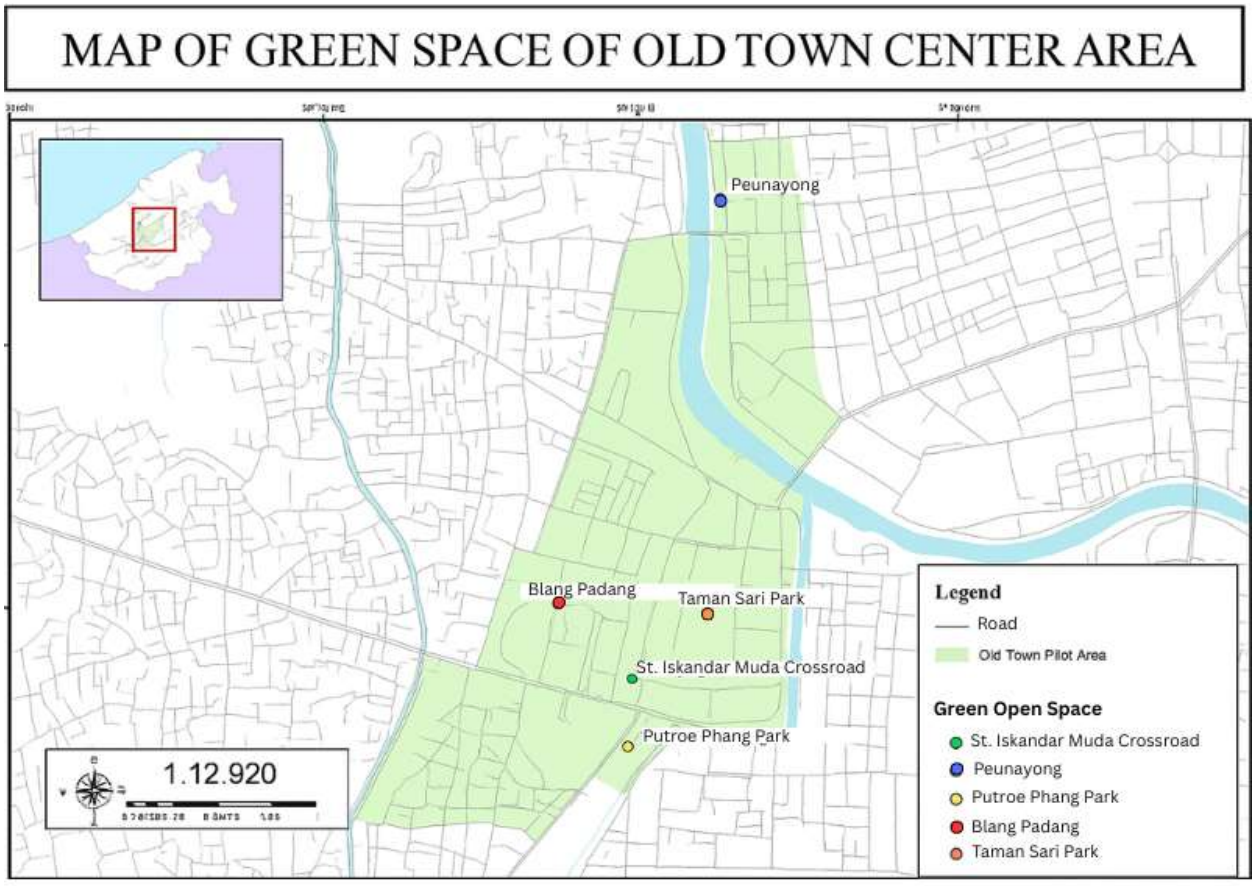

Fig. 3: Green Open Space Map
Source: Banda Aceh City Spatial Plan (RTRW) 2009–2029

Table 1. Banda Aceh's urban zoning directives

Area	Zone Development Directive	Zone Development Objective	Permitted / Encouraged Activities	Controlled / Restricted Activities	Prohibited Activities
Cultural Heritage Area	Green Open Space	To preserve and protect urban/environmental land that forms part of the cultural heritage area, enabling appreciation of its visual and aesthetic values.	Outdoor recreational activities that enhance the intensity of cultural and social interactions within the community.	Commercial activities that support outdoor recreational use.	Commercial and service-related activities that exploit public facilities and generate waste or pollution.
Green Open Space	City Park	To provide green open spaces as outdoor recreational facilities. To serve as a component in forming the urban microclimate, thereby enhancing the comfort of urban spaces.	Outdoor recreational activities that enhance the intensity of cultural and social interactions within the community.	Commercial activities that support outdoor recreational use.	Commercial and service-related activities that exploit public facilities and generate waste or pollution.

Source: RTRW (Rencana Tata Ruang Wilayah) Kota Banda Aceh 2009–2029

Green open spaces (RTH) in the Old City Center area include urban parks such as Taman Sari, Taman Putroe Phang, SMEP Peunayong Field, and the green corridors along Teuku Umar Street and Iskandar Muda Street. These green spaces play a vital role in enhancing urban comfort by providing recreational areas as well as ecological functions such as water infiltration.

According to the Banda Aceh City Spatial Plan (RTRW) 2009–2029, the city government has set a target of allocating at least 30% of the total city area for green open spaces. This initiative is part of a broader strategy to develop a green and climate-adaptive city (Banda Aceh City Government, 2009). The Baiturrahman–Peunayong area has been substantially developed as the city center, featuring the integration of green open spaces and cultural heritage zones, thereby reinforcing the city's socio-ecological functions (Table 1)

The existing conditions indicate that green open spaces (RTH) in this area are already available and functioning reasonably well, although improvements in quality and maintenance are still needed. Enhancing accessibility and user comfort, as well as revitalizing existing facilities, is essential to optimizing the socio-ecological functions of these spaces. Overall, the presence of green open spaces in the Old City Center is substantively aligned with the directives of the Spatial Plan (RTRW), serving as public zones with high ecological value.

However, while the RTRW 2009–2029 provides a clear framework for the development and integration of RTH in strategic urban zones, its implementation in the field has been partial and uneven. Several designated RTH areas lack adequate infrastructure, signage, and landscaping, which undermines their usability and public engagement. This discrepancy highlights a common challenge in urban planning—where policy documents articulate ambitious goals, yet realization on the ground is constrained by limited budget allocations, inter-agency coordination gaps, and maintenance issues. Strengthening the link between planning and execution is therefore critical to ensure that green open spaces contribute effectively to urban sustainability, resilience, and quality of life in Banda Aceh.

Pedestrian Path

Jan Gehl outlines 12 key criteria for assessing the quality of pedestrian environments, which are categorized into three main groups: protection, comfort, and enjoyment. These criteria serve as a framework for evaluating how well urban spaces support pedestrian activity [1]. In addition, Gehl emphasizes fundamental principles of urban planning and traffic management, advocating for designs that prioritize human-scale development, accessibility, and vibrant public life. In the latter half of the 20th century, urban scholars and researchers across the globe began advocating for cities and spaces that prioritize pedestrian

movement. This emphasis on walkability has continued into the 21st century, with a growing focus on promoting walking as a primary mode of urban mobility [12].

The existing conditions of pedestrian pathways in Baiturrahman District, Banda Aceh City, continue to face various challenges despite planned improvements outlined in the Banda Aceh Spatial Plan (RTRW). Pedestrian accessibility is highly dependent on the physical condition of pedestrian infrastructure (Figure 4). Pedestrian pathways must meet specific physical criteria in terms of facilities and amenities to ensure safe and comfortable pedestrian movement. The physical quality of these pathways significantly influences their overall usability [6].

Fig. 4: The uneven condition of the pedestrian path affects walkability and accessibility

Baiturrahman District serves as the city center of Banda Aceh, encompassing historic areas such as the Baiturrahman Grand Mosque, Aceh Market, and Pante Pirak Bridge. The RTRW has planned enhancements to pedestrian facilities across four main segments within this district to support connectivity between functional zones, including commercial, office, educational, and tourism areas. However, several existing issues persist along the pedestrian routes:

1. Poor Connectivity Between Segments
   Pedestrian pathways in the area often lack optimal connectivity between segments, making it difficult for pedestrians to navigate safe and comfortable routes.
2. Insufficient Comfort and Safety
   Factors affecting comfort, such as sidewalk width, lighting, and the availability of supporting facilities, remain inadequate. For example, green corridors that provide shade for pedestrians, reduce pollution from motor vehicles, and create a pleasant and cool environment are limited. These deficiencies discourage pedestrians from using the available sidewalks.
3. Sidewalk Encroachment and Misuse
   Sidewalks in certain areas, such as near Aceh Market and the Tsunami Museum, are frequently used for motor vehicle parking and street vending, which disrupts the primary function of pedestrian pathways. The effective width of the sidewalks is reduced, limiting pedestrian movement and often forcing pedestrians to share space with vendors. Additionally, some sections of the pedestrian pathways are damaged, posing safety risks, particularly for individuals with disabilities.

Historically, streets have served as the primary setting for a wide range of social activities, including commerce, gatherings, entertainment, social interaction, public demonstrations, and children's play [13]. However, in several parts of the old city center of Banda Aceh, pedestrian pathways have been increasingly utilized by street vendors as spaces to conduct their business activities (**Figure 5**). This informal use of public infrastructure not only obstructs the movement and comfort of pedestrians but also significantly alters the original purpose and function of these public spaces. As a result, the role of pedestrian walkways as safe, accessible, and inclusive areas for public mobility and interaction is compromised, raising concerns about urban management, spatial equity, and the preservation of public space functionality.

Fig. 5: Pedestrian pathways have been utilized as spaces for street vending

Protected Area

According to Presidential Decree No. 32 of 1990, a Protected Area is defined as a zone designated primarily to preserve environmental sustainability, including both natural and man-made resources. The protected areas within the Old City Center of Banda Aceh consist of Local Protection Areas, Cultural Heritage Areas, Disaster-Prone Areas, and Green Open Spaces. The Old City Center of Banda Aceh, particularly Peunayong and its surroundings, is not classified as a natural protected area. However, it contains important elements of local protection, namely the riverbank buffer zones of the Krueng Aceh River, which flows through the Peunayong area. According to the Banda Aceh Spatial Plan (RTRW), riverbank buffer zones are categorized as local protected areas that must be preserved to maintain the ecological and hydrological functions of the river [14]. This function is crucial for flood control and preserving the environmental quality of the surrounding residential areas.

Fig. 6: Krueng Aceh River

The Krueng Aceh is the main river that divides Banda Aceh and serves vital roles as the city's primary drainage system, a raw water source, and a green buffer zone with significant ecological and recreational potential. The river stretches from its upstream source at the foothills of Mount Seulawah to

its estuary at Ulee Lheue, with a watershed area (DAS) covering 1,712 km². According to the Banda Aceh RTRW 2009–2029, Krueng Aceh is designated as a protected riverbank area with the primary functions of protecting the city's hydrological system, mitigating flood risk, and providing urban green open space [15].

However, the current physical condition of Krueng Aceh shows that in several segments, especially within the Old City areas such as Peunayong and Kampung Baru, the riverbank has been encroached upon by illegal buildings and informal sector activities. This has led to the narrowing of the riverbank, sedimentation-induced river shallowing, and a decline in water quality due to untreated domestic wastewater discharge. Additionally, the visual and ecological functions of Krueng Aceh as an urban green corridor remain suboptimal.

In contrast to Krueng Aceh, Krueng Daroy is a secondary river flowing through the city center and eventually draining into Krueng Aceh. Although smaller, Krueng Daroy functions as a drainage channel for densely populated areas such as Baiturrahman, Kutaraja, and Kuta Alam. The river is experiencing channel narrowing, sedimentation, and pollution from household waste. Dense settlements and commercial activities along its banks disrupt the hydrological and visual functions of the area, increasing the risk of localized flooding during heavy rainfall.

Fig. 7: Krueng Daroy River

RTRW guidelines, including the establishment of green corridors and public spaces along the riverbanks, have largely guided the management of riverbank buffer zones in this area. However, informal commercial activities remain at certain points, occupying riverbanks without regard for conservation regulations. To ensure full compliance with the RTRW, it is necessary to strengthen supervision and revitalize the riverbank zones so that they can function optimally as protected areas with recreational and educational value.

4. Conclusion

The Protected Area Plan outlined in the Banda Aceh City Spatial Plan (RTRW) 2009–2029 includes various spatial elements designated for protection due to their ecological, historical, and social significance [11]. These include riverbanks, cultural heritage zones, green open spaces (GOS), and disaster-prone areas. One of the strategic components within these protected areas is the Green Open Space, which the RTRW targets to comprise 30% of the city's total land area. This target encompasses urban parks, green corridors, urban forests, and private green yards.

Moreover, the development of pedestrian pathways has become a primary focus, embracing the concept of a pedestrian- and tourist-friendly Old City. Themed pedestrian routes, such as the Heritage Trail, connect key landmarks including the Baiturrahman Grand Mosque, Aceh Market, Taman Sari, and the Tsunami Museum. Sidewalks are designed to be wide and orderly, utilizing non-slip materials, tactile guiding blocks for individuals with disabilities, and side drainage systems. To enhance comfort during nighttime, the pathways are supported by thematic street furniture, shade trees, and pedestrian lighting. Furthermore, the Banda Aceh Spatial Plan (RTRW) directs the management of the Krueng Aceh and Krueng Daroy rivers through strategies of river normalization, riverbank restoration, and integration with the city's green open space (RTH) network. Krueng Aceh is planned to serve as the backbone of the city's green corridor, connecting urban parks, pedestrian pathways, and public spaces within the city center.

Meanwhile, Krueng Daroy is designated as a secondary green corridor aimed at supporting environmental aesthetics and education by enforcing riverbank regulations, sediment removal, and developing small-scale recreational functions.

The successful management of public open space is a critical determinant for achieving a clean, green, and climate-adaptive Banda Aceh. Therefore, synergy among the government, local communities, and educational institutions is essential to realize the revitalization of these rivers as vital ecological and social assets of the city.

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