

The Development of Campervan Ground at Madasari Beach

Taqiy Gusdi Baitullo^{1*}, Atikah Nurhayati², Donny Juliandri Prihadi³, Ahmad Prawira Dhahiyat⁴, Mohamad Candra W. Arief⁵

¹Marine Tourism, School of Vocational, Universitas Padjadjaran, Indonesia

²Department of Marine Science, Faculty of Fisheries and Marine Science, Universitas Padjadjaran, Indonesia

³Department of Fisheries, Faculty of Fisheries and Marine Science, Universitas Padjadjaran, Indonesia

Abstract

Madasari Beach is one of the beaches located in Pangandaran Regency, West Java. The development of campervans is currently very popular globally and internationally, especially after the pandemic. This means the purpose of the research is to develop a campervan ground site at Madasari Beach. This research uses a qualitative research approach with an exploratory descriptive research type. Data collection techniques that use observation, interviews, documents, and archives. Analyzed with an interactive analysis model where activities in qualitative data analysis are carried out interactively and continuously until completion. This research uses QGIS, AutoCAD, and SketchUp in planning the development of campervan ground tourist attractions, and designs the development of the existing campervan ground tourist attraction area by not changing the state of the field too much. In the design, some things such as existing vegetation around, existing roads in related tourist attractions, and main roads leading to or passing through related tourist attractions are maintained. This research concludes that there are several things to consider, such as community participation, user comfort, and natural preservation that are considered. However, there needs to be further research related to tourist attractions, especially based on the point of view of tourism attraction management.

Keywords: Campervan, Development, Tourist Attraction, Madasari Beach

INTRODUCTION

Madasari Beach is one of the beaches located in Pangandaran Regency, West Java. The development of Madasari Beach to date is still minimal, with development only on accessibility, accommodation, and other small developments. There has been no development specifically for attractions in Madasari Beach. The current condition of Madasari Beach is far inferior to Pangandaran Beach, with total visitors of up to 332,929 in 2022, while Madasari Beach only reached 10,520 in 2022 (Dinas Pariwisata dan Kebudayaan Provinsi Jawa Barat, 2023). With six tourist attractions in Madasari Beach tourist attraction, it shows that Madasari Beach has enormous tourism potential, but its development is still very minimal.

The campervan itself is one of the new attractions that are developing in Indonesia. The campervan itself is an alternative tour where tourists can experience the sensation of traveling by caravan (Sari & Suarmana, 2022). Activities carried out in campervans are not too different from camping tourism activities (Kementrian Pariwisata dan Ekonomi Kreatif, 2025). In practice, campervan ground is not too far away and even falls into the scope of camping activities, both of which are outdoor activities that require space to carry out their activities. This makes the need for a space that can be used as a campervan activity, the so-called campervan ground. The campervan ground itself was chosen considering the popularity of existing developments in several areas in Indonesia, such as the Tianyar Savannah tourist attraction in Tianyar Village, Karangasem, Bali; the Karang Boma tourist attraction in South Kuta, Bali; and Watu Tapak Camp Hill tourist attraction, in Yogyakarta. However, what distinguishes the campervan

Correspondence address:

Taqiy Gusdi Baitullo

Email : taqigusdi@gmail.com

Address : Marine Tourism, School of Vocational, Universitas Padjadjaran, Indonesia

ground from some of these tourist attractions is that Madasari Beach has six other tourist attractions that can be integrated, with the campervan ground as the main point at Madasari Beach.

Development in tourism itself emphasizes the importance of integrating economic, social, and environmental aspects (Mowforth & Munt, 2009). There are several parts in the evolution of tourism or tourism development, starting from exploration, involvement, development, consolidation, stagnation, and the last part, with each possibility that occurs starting from rejuvenation or decline (Butler, 1980). Looking at the existing field conditions in the related tourist attraction, currently, Madasari Beach is at the level of involvement where the local community utilizes the tourist attraction that is starting to be built with the provision of exclusive facilities for visitors, increased contact between local communities and visitors, local community involvement in the tourism industry that is starting to increase, and several other things related between the community and visitors who come.

Research about campervans has been everywhere, even since the 90s, but it became hot again after pandemics hit across the world and knocked out the tourism sector for about 1 to 2 years in many countries. At this moment, the strategy, target market, developing strategy, and even tourist profile shift from conventional mass tourism to limited-sustainable tourism. Because of this, many alternative attractions can accommodate tourists with sustainable tourism profiles, such as glamping. As tourist profiles shift to more private, campervans are booming again because they sell the private that many tourists want, and as the research about campervans as tourist attractions becomes mass to this day.

Right now, Madasari Beach is one of many places in Priangan Timur that are included in the priority development program by the West Java Tourism Authority. This priority development program hopes to increase tourist visits by developing certain places that have the potential to be developed, and potentially increase profits for local communities and the government. This research supports the priority development program by developing a campervan ground with a beach as the main landscape as one of the tourist attractions in Madasari Beach in hopes of increasing tourist visits to Madasari Beach.

LITERATURE REVIEW

Maritime Tourism Attractions

The ocean and its surroundings have largely become the new frontier as the fastest-growing area of the tourism industry today (Hall, 2001; Attri, 2018). Maritime tourism is a recreational activity that involves moving from one place to another where the place focuses on marine environment activity (Orams, 1994). Maritime tourism includes the travel of tourists to a destination, leaving their original place of residence for recreational activities with a focus on the use of the marine environment as a location for tourist activities, including the marine environment as a tourist attraction (Junaid, 2018). The marine tourism industry itself can be grouped into industries that are directly associated with marine tourism and industries that are not directly associated with marine tourism, with marine tourism indirectly associated (Orams, 1994; Junaid, 2018).

Maritime tourism itself is closely related to its human resources based on fishermen, where fishermen have socio-cultural life and other habits that can be an attraction for visitors who come. Therefore, marine tourism is usually a match between nature tourism and cultural tourism. Marine tourism is a type of tourism that utilizes natural resources without excluding other tourism potentials owned by a tourist destination (Junaid, 2018). Maritime tourism includes tourism activities that utilize the sea as the main basis for conducting tourism activities, compared to land. However, in its implementation, this type of tourism still uses facilities on land to support the implementation of marine tourism at sea activities (Ecorys, 2013; Junaid, 2018).

Development of Tourist Attractions

Tourism requires continuous development to adapt to tourists or travelers who come with the target of satisfying tourists or travelers to give a meaningful impression. Tourism development itself emphasizes the importance of integrating economic, social, and environmental aspects in a sustainable development approach in tourism (Mowforth & Munt, 2009). Tourism development is needed to improve several economic, social, and environmental aspects, so evolution is needed in tourism development. There are several parts in the evolution of tourism, especially in some countries, that make tourism an important role in the country's economic turnover (Butler, 1980).

Several stages in the evolution of a tourism area, or what is currently called a tourist attraction. There are six stages of evolution of tourism areas, ranging from exploration, involvement, development, consolidation, stagnation, and the last part, with each possibility that occurs ranging from rejuvenation or decline (Butler, 1980). Currently, Madasari Beach tourist attraction is at the stage of involvement. This stage is where local communities begin to utilize tourist attractions by building exclusive facilities for visitors, increasing contact

between local communities and visitors, local community involvement in providing food for high visitors, and others. At this stage, the tourist attraction itself has a market for visitors who come, and the tourist attraction itself begins to adjust to the needs of visitors who come (Butler, 1980).

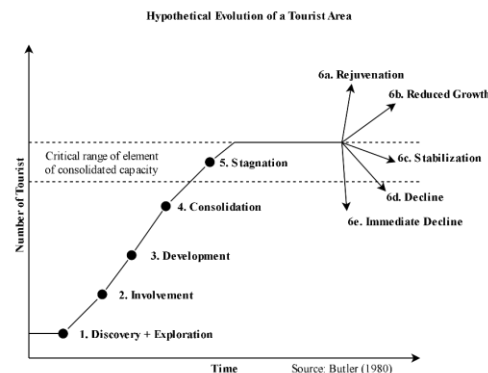


Figure 1. Evolution of a Tourist Area
Source: Butler, 1980

Sustainable Tourism Attraction Development

The development of tourism, especially marine tourism, is currently oriented towards the development of sustainable tourism or sustainability tourism. Sustainable tourism is a type of tourism development that meets the needs of visitors and local communities while protecting and maintaining existing resources with resource management that can meet economic, social, and aesthetic needs while maintaining cultural integrity, ecological processes, biodiversity, and the environment (United Nations World Tourism Organization, 1998). Sustainable tourism has its principles, starting from the characteristics, objectives, and conditions that must be met, and components of sustainable tourism.

Characteristics

Sustainable tourism is characterized by several key elements that ensure long-term benefits for both the environment and local communities. One of its primary goals is to improve the welfare of neighboring communities by actively contributing to their economic, social, and cultural well-being. Sustainable tourism also emphasizes the importance of preserving and maintaining both the natural and cultural environment. It encourages the responsible use of natural and cultural resources to boost the local economy while ensuring that these valuable assets are not eroded or damaged over time (Upskill, 2024).

Destination

Sustainable tourism at the destination level seeks to optimize the use of environmental resources that are fundamental to the development of tourism. This involves maintaining essential ecological processes, preserving the natural heritage, and safeguarding biodiversity. Furthermore, sustainable tourism respects the socio-cultural authenticity of local communities, preserving traditional ways of life, heritage, and values, whilst fostering cultural understanding and tolerance. From an economic perspective, it strives to ensure long-term viability by providing equitable socio-cultural benefits to all stakeholders. This includes stable employment, opportunities for income generation, access to social services for local communities, and a meaningful contribution to poverty alleviation (United Nations World Tourism Organization, 2005).

Condition

Several key aspects must be fulfilled for tourism to be considered truly sustainable. First and foremost, it should contribute to both cultural and nature conservation, while also supporting the well-being of local communities and indigenous peoples in the region. Education should be embedded at the core of the visitor experience, helping tourists to gain a deeper understanding of the places they visit. Sustainable tourism must also involve activities that promote accountability, not only among tourists but also within the tourism industry itself. It should operate within the limits of the environmental scale, ensuring that tourism development aligns with the ecological capacity of the area. The use of non-renewable natural resources must be minimized wherever possible, and there should be respect for the physical and social carrying capacities of tourist attractions. Additionally, efforts should be made to reduce the repatriation of income generated, ensuring more economic benefits remain within the local community (Upskill, 2024).

Component

The International Labour Organization, or ILO, explains several things about the components of sustainable tourism as follows. According to the International Labour Organization (ILO), sustainable tourism has the potential to address environmental challenges while simultaneously maximizing economic benefits. It is posited that sustainable tourism can generate a range of positive impacts within the tourism sector, particularly in terms of socio-economic development.



Figure 2. Sustainability Tourism Component

Source: International Labour Organization, 2010

One of the primary benefits identified is the potential for increased employment opportunities. As investments in sustainability grow, local incomes are expected to rise, thereby stimulating employment across both direct and indirect sectors. This includes not only jobs within tourism services but also those associated with supporting infrastructure and other auxiliary industries. The multiplier effect resulting from such investments can contribute significantly to local and regional economic development. In addition to job creation, sustainable tourism plays a vital role in poverty reduction and the enhancement of community development. By prioritizing the use of local labor and services as the primary source of support for tourist activities, the tourism sector contributes to the empowerment and economic upliftment of surrounding communities. This approach ensures that the benefits of tourism are retained locally, reinforcing a cycle of sustainable growth.

Moreover, sustainable tourism has the potential to safeguard and promote cultural heritage. Cultural attractions, which are often integral to the tourism experience, benefit from increased attention and appreciation by visitors. This, in turn, encourages local stakeholders to preserve and manage cultural assets more effectively. The economic value placed on cultural tourism through sustainable practices helps ensure the longevity and integrity of these resources for future generations. In essence, the ILO underscores that sustainable tourism, when implemented responsibly, catalyzes inclusive economic development, cultural preservation, and environmental stewardship, thereby reinforcing its role as a key contributor to long-term sustainability goals (International Labour Organization, 2010).

Development of Maritime Tourism Attractions

The development of marine tourism attractions is associated with various fundamental interests. In the development of marine tourism attractions, the local community becomes the main subject to develop marine tourism attractions. It can be interpreted that the progress or failure of a marine tourism attraction in a region follows the quality of human resources in the related tourist attraction. This strategic approach positions the community not only as a key resource in the development process but also as an integral beneficiary of its outcomes. In the context of marine tourism, empowering local communities is central to achieving sustainable and inclusive development. The management of marine tourism attractions must therefore be grounded in a set of foundational principles that ensure equitable involvement, shared benefits, and collective responsibility.

The first of these is the principle of co-ownership, which acknowledges that marine tourism areas are collectively owned. As such, communities possess inherent rights within these spaces—rights that must be recognized, protected, and integrated into the broader governance framework. Co-ownership entails not only access and participation but also a mutual obligation to safeguard shared marine resources. Secondly, the principle of cooperation or co-management underlines the need for collaborative governance. Effective coastal and marine tourism management requires the active involvement of all societal stakeholders, including

governmental institutions, local communities, and non-governmental organizations. These entities must work in partnership to ensure that decision-making processes are inclusive, transparent, and reflective of local interests and knowledge systems.

Lastly, the principle of co-responsibility highlights the shared duty to maintain and protect marine tourism attraction areas. The sustainability of such destinations is contingent upon the collective actions of all stakeholders, reinforcing the idea that the long-term success of marine tourism is a common objective that necessitates joint commitment and stewardship. Together, these principles form a cohesive framework for participatory marine tourism management, one that fosters local empowerment, ensures environmental sustainability, and aligns with broader goals of community-centered development (Dinas Pariwisata Pemuda dan Olahraga Kabupaten Pesisir Selatan, 2017).

Previous Research

As a comparison, researchers conducted a study on the development of campervan ground tourist attractions with the following details:

Table 1. Previous Research

Author	Year	Title	Findings	Relevance
Özge Alkan	2021	Camp and Caravan Tourism	Caravan tourism can provide welfare, especially for people in developed areas (Özge, 2021).	This research discusses developing campervan or caravan tourism, including developing campervan ground.
Nijas V.P, Arpita Srivastava, Bijay Kumar Das	2023	Identification of Tourism Potential of Vagamon (Idukki, Kerala) for Caravan Park	This is research that focuses on the development of one type of campervan ground, namely caravan park. The Caravan Park itself is focused on caravan lodging with simple and modern facilities (V.P. et al., 2023).	The author of this research is developing a caravan park in India that can be used as a campervan. This research gave inspiration for developing a campervan ground in Indonesia.
Donny Juliandri Prihadi, Shafira Bilqis Annida, Fanny Kristiadhi, Ahmad Prawira Dhahiyat, and Nur Sakinah Junirahma	2024	Strategy of Madasari Beach Marine Tourism, Pangandaran Regency, Indonesia	This research focuses on developing a strategy that can be used for the development of Madasari Beach (Prihadi et al., 2024).	This research gives another perspective to look at, especially for the local community and government that manages Madasari Beach.
Sri Mariati, Andre Gilitasha, Myrza Rahmanita, Sundring Pantja Djati, Robiatul Adawiyah	2023	Analysis of Sustainable Tourism Destination Development for Digital Nomads (Comparative Study: Lisbon-Portugal and Canggu, Bali-Indonesia)	Two tourist attractions, despite the differences between country's law, tourism system, etc. still have the same concept of sustainable development regarding tourist attractions (Mariati et al., 2023).	Analyzing concept of sustainable development concept in Indonesia is one of many things to be considered. Madasari Beach alone have their local communities, local businesses that must included in developing also managing campervan ground.
Felita Eka Novianti, Pradipta Dirgantara	2023	Campervans Community Lifestyle in Bandung: A Case Study in Environmental Communication	discusses the context of environmental communication in terms of modes of transport, especially campervans, which provide many options from short-term to long-term, but until now the use of campervans is still not commonly used, so a new strategy is needed to increase campervans in Indonesia (Novianti & Dirgantara, 2024).	When developing a campervan ground, its wise to not just look from nature, social, culture, and economics perspective. But also need to look from communication perspective. This perspective give us other insight about how short or long term development will affect to user in this case campervan tourist in Indonesia.
Shafira Bilqis Annida, Riyanti	2024	Potential and Development of Marine Tourism at	This research dicusses the potential of developing marine tourism in Madasari Beach,	Campervan ground in Madasari Beach can be used as one of many accomodation for tourist

Author	Year	Title	Findings	Relevance
Rahmawati, Faqih Baihaqi		Madasari Beach Pangandaran District, Indonesia	using 3A of tourism (attractions, accessibility, and amenities) (Annida et al., 2024).	who visit Madasari Beach. So campervan ground need to be synchronize with attraction even amenities and accessibility to maximize the potential given by developing campervan ground.

Source: International Labour Organization, 2010

METHODS

Research Context

This research was conducted at Madasari Beach, Masawah Village, Cimerak District, Pangandaran Regency, West Java. This research was carried out for about 6 months, starting in February 2024 until around July 2024. Topographically, the Madasari Beach tourist attraction is located on the beach, so it is surrounded by the coast in the south direction as well as in the east direction, then surrounded by forests in the west direction to the north of Madasari Beach.

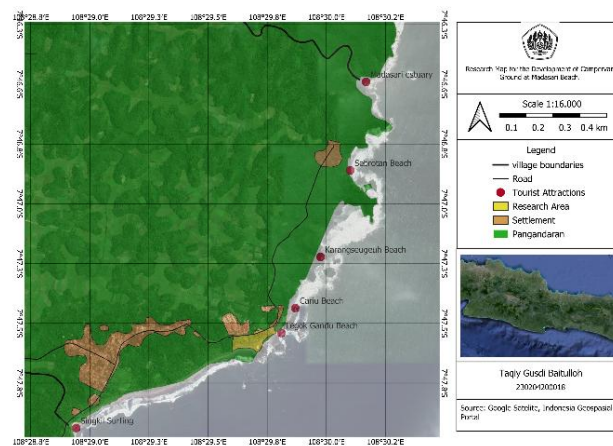


Figure 3. Map for the Development of Campervan Ground at Madasari Beach.

Source: Research data, 2024

This study uses using qualitative research approach with an exploratory descriptive research type. Where qualitative research seeks to build the views of the people in detail and form with words, a holistic (thorough and in-depth) also complex picture (Tohirin, 2013). Then the type of descriptive research, which is interpreted as a problem-solving procedure, where the problems are investigated by describing the state of the subject and or object in research which can be people, institutions, society, and others at present based on the facts that appear or as they are (Febriyan, 2017). The type of exploratory research is research on problems that have never been traced, or have never been studied by others, so that even in the "darkness," the exploratory researcher still tries to find the problem that is or will be studied (Bungin, 2013).



Figure 4. Tourist Attractions of Madasari Beach

Source: Research data, 2024

As stated in the introduction, this research aims to develop a campervan ground at Madasari Beach. There for some regulations are used such as Regional Regulation of Pangandaran Regency Number 3 of 2018 concerning the Regional Spatial Plan of Pangandaran Regency Year 2018 - 2038, Pangandaran Regent

Regulation Number 80 of 2022 concerning the Management of Coastal Boundaries and River Boundaries, and Article 36 of the Regulation on Certification and Qualification of Tourism Facilities Number 30791 Dated 31 May 2019 by the Turkish Minister of Tourism and Culture. These regulations are in place to ensure that the development follows the regional designation as well as the existing development boundaries.

Data Collection

This study uses qualitative data type where the data is in the form of words, schemes, and images. This data will be based on real events that occur in the field or actual problems that occur specifically in the research area (Sugiyono, 2013). This is supported by data collection techniques that use observation, interviews, documents, and archives. In detail, the data collection technique explains that observation is a data collection technique that systematically observes elements that appear in research (Sugiarto, 2017). Furthermore, interviews are data collection techniques that are carried out if related researchers want to know the problems studied and the things needed in research based on respondents in more depth (Sugiyono, 2020). The interviews were conducted using in-depth interview techniques, which involve the process of obtaining information for research using questions and answers while meeting face-to-face with relevant informants where the informants are involved in the social life of researchers for a relatively long time (Sutopo, 2006).

In this research, 15 research subjects were selected with purposive sampling using criterion sampling selection techniques. With this, the researcher must have background knowledge about the subject in question to get a subject that is by the research objectives and/or get accurate data. So the criteria of the research subjects, namely, have expertise in the development of tourist attractions, participate directly in the management of related tourist attractions, and visitors who have come to related tourist attractions. The research subjects were obtained based on the above consideration criteria, namely the government involved in the development and policies in the management and development of Madasari Beach tourist attraction, the management and/or the community involved in the management of Madasari Beach tourist attraction, and the visitors who have come to Madasari Beach tourist attraction. By this, interviews are used to reinforce data collected by observation.

Documents are written sources of desired information as opposed to oral testimony (Amin & Siaahan, 2016). Finally, archives in Law Number 43 of 2009 concerning Archives are conveyed as records of activities or events by the development of technology and communication made by the state, government, and other agencies in the implementation of the life of society, nation, and state (Kearsipan, 2009). This research was conducted through a series of structured stages to ensure a comprehensive and methodologically sound approach. The process was divided into five main phases: the Preparation Stage, Data Collection Stages, Data Analysis and Writing Stages, the Mock-up Development Stage, and the Research Finalisation Stage. Each phase comprised specific activities, progressing logically from initial planning to the final reporting.

The initial phase focused on laying the groundwork for the study. It began with the proposal for the final project, which outlined the research objectives and methodologies. A literature review was conducted to gather existing knowledge and theoretical foundations relevant to the study area. Subsequently, the data collection phase was carried out, involving a range of activities. These included a review of literature and documents, the development of research instruments, and the collection of data through observations and interviews. The results of these efforts were compiled to form the empirical basis for the following analytical work. Once data had been collected, the analysis and writing stage commenced. Researchers began interpreting the findings through analysis and synthesis, drawing meaningful conclusions, and initiating the process of academic writing. This stage produced the research findings that directly informed the subsequent design work and contributed to the overall research outcomes. With the findings in hand, the practical design phase was undertaken. This involved planning a tourist attraction area and developing a mock-up for a campervan ground and associated attractions. The phase translated theoretical insights into real-world design applications, bridging the gap between research and practice. Finally, the research was brought to completion through a thorough finalization stage. This phase involved validating the research by reviewing and testing both findings and mock-ups for relevance and accuracy. The process concluded with the writing of the final report, which documented the entire research journey and its outcomes comprehensively and coherently.

In this research, after the data is collected, an analysis of the area of attraction is formed, which will be analyzed based on qualitative data taken interactively and continuously until completion. Thus, the structured stages of the research are described below:

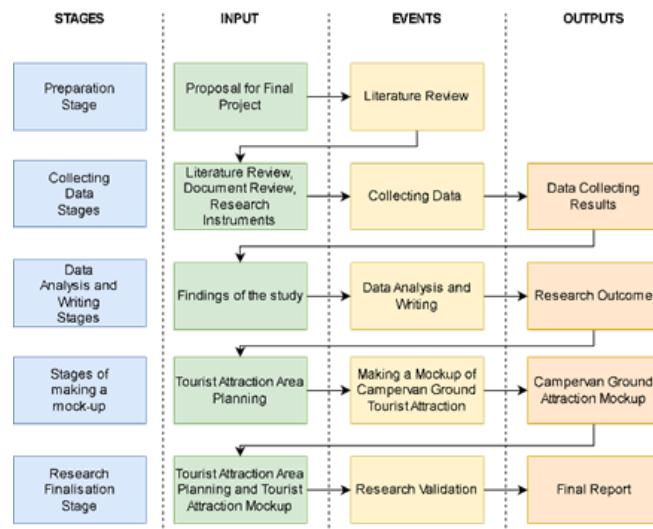


Figure 5. Research Stages
Source: Research data, 2024

Data Analysis

The research subject itself was taken intentionally, which can be interpreted as the subject was taken based on the objectives to be achieved, or the subject has special considerations so that it is worthy of being used as a source of information. In this research, subjects with expertise in development and subjects who participate in the management of related tourist attractions are needed. So, it was determined that the research subjects were the government and managers of related tourist attractions. After the data is collected, it is analyzed with an interactive analysis model where activities in qualitative data analysis are carried out interactively and take place continuously until completion, resulting in data saturation (Miles & Huberman, 1984; Sugiyono, 2020). The stages in the interactive analysis model itself are as follows:

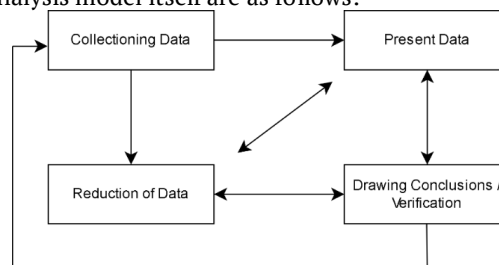


Figure 6. Interactive Data Analysis Model
Source: Research data, 2024

The development design itself will use several tools such as QGIS, AutoCAD, and SketchUp. Each of these tools has its function, starting from QGIS for displaying and creating map data (Prahasta, 2002), AutoCAD for two-dimensional drawing (Dino & Sofianto, 2021), and SketchUp for three-dimensional modeling (Ismunandar & Adistana, 2020).

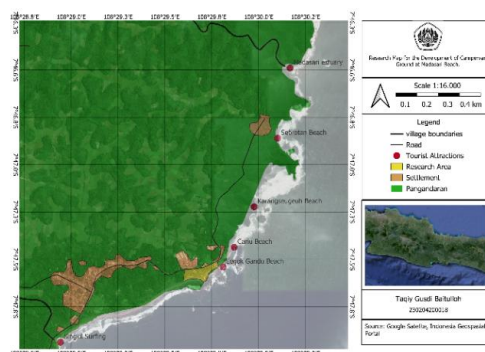


Figure 7. Map created by QGIS
Source: Research data, 2024

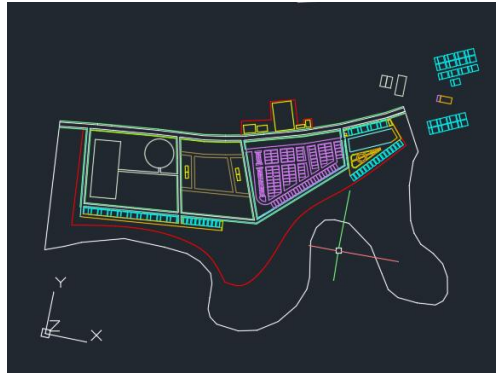


Figure 8. Sketch Shaped by AutoCAD
Source: Research data, 2024

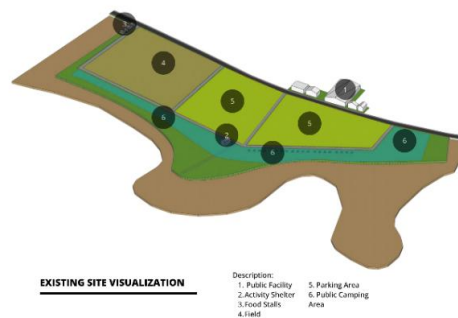


Figure 9. Sketch formed by SketchUp
Source: Research data, 2024

RESULTS AND DISCUSSION

Existing Data

The area proposed for development is situated along Pantai Masawah Street, within Masawah Village, Cimerak District, Pangandaran Regency, West Java 46395. It lies on the beachfront of Madasari and encompasses approximately 311 square meters. Pantai Wisata Street borders the site to the north, Madasari Beach to both the south and east, and a forested area to the west. There are six main attractions, which include Madasari Estuary, Sebroten Beach, Karangsegeuh Beach, Cariu Beach, Legok Gandu Beach, and Singkil Surfing. The arrangement of the Campervan Ground area in Madasari Beach is very useful in providing an accommodation function that connects the six tourist attractions, thus facilitating access for visitors who want to explore the entire area. A good and strategic arrangement of the Campervan Ground is expected to increase the comfort and experience of visitors while in the Madasari Beach area.

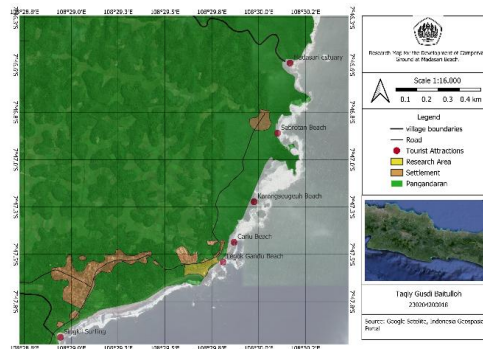


Figure 10. Area of Research
Source: Research data, 2024

In addition to serving as an accommodation center, Madasari Beach Campervan Ground is also designed to be one of the area's top attractions. The Campervan Ground not only offers a unique place to stay that is different from conventional accommodation but also provides an opportunity for visitors to experience nature

up close and personal. This facility is expected to attract visitors with a special interest in outdoor and adventure activities, as well as those looking for a more comfortable and well-facilitated camping experience. Around the Madasari Beach area, there is an evacuation route that leads westward to the village. There is also signage that shows disaster mitigation that can be carried out when a disaster occurs at the location. In this case, an earthquake and a tsunami.

Some regulations are used for this research, including the Regional Regulation of Pangandaran Regency, Pangandaran Regent Regulation, and Tourism Facility Certification and Qualification Regulation. The details of those regulations are below.

Regional Regulation of Pangandaran Regency No. 3/2018 on the Regional Spatial Plan of Pangandaran Regency 2018-2038.

Regional Regulation Number 3 of 2018 concerning the Regional Spatial Plan (Rencana Tata Ruang Wilayah, RTRW) of Pangandaran Regency for the period 2018–2038 identifies Madasari Beach as one of the key tourism cultivation zones, particularly within the category of nature-based tourism. Situated in the Cimerak District, Madasari Beach is listed in Article 53, Paragraph (2), letter f, and is recognized as a Tourism Designation Area. This designation refers to a specific geographical area that has been allocated or developed to support tourism activities and meet associated infrastructural and experiential needs. The tourism development strategy outlined in Article 5, Paragraph (2), Letter B, emphasizes the integrated and environmentally sustainable development of tourism areas on both national and international scales. The regulation provides a strategic direction that includes ensuring tourism activities and destinations meet both national and international standards while promoting optimal spatial use that accounts for environmental carrying capacity and land limitations.

Furthermore, the regulation highlights the importance of enhancing tourism-supporting infrastructure and facilities, as well as developing an efficient and integrated transportation network that links tourist destinations across the region. It also emphasizes strengthening tourism information systems and promotional efforts to increase visibility and engagement. Cultural preservation is another core focus, with a commitment to developing cultural tourism areas that are grounded in the unique characteristics and local wisdom of the region. Environmental protection is prioritized through regulations aimed at safeguarding the natural ecosystems that underpin the tourism experience. Lastly, the regulation calls for the active involvement of local communities and private sector stakeholders in tourism planning, development, and management processes. This comprehensive regulatory framework reflects a sustainable and inclusive approach to tourism development, integrating spatial planning with socio-economic growth and environmental stewardship. It serves as a foundation for achieving long-term, responsible tourism outcomes in Pangandaran Regency (Rencana Tata Ruang Wilayah Kabupaten Pangandaran Tahun 2018 – 2038, 2018).

Pangandaran Regent Regulation No. 80 Year 2022 on the Management of Coastal and River Margins.

Pangandaran Regent Regulation Number 80 of 2022, concerning the Management of Coastal Boundaries and River Boundaries, provides a regulatory framework for the sustainable utilization of coastal zones. Article 1 defines a coastal boundary as the land area extending inland from the highest tide point, with a minimum width of 100 meters, depending on the specific characteristics of the coastline. This delineation is intended to safeguard the integrity and function of coastal ecosystems while guiding land use within sensitive shoreline zones. Article 5, paragraph (d), affirms that one of the permitted uses of coastal boundaries includes the development of tourism activities. This strategic integration of tourism into coastal zone management aims to support local economic development while maintaining ecological balance.

Further elaboration is provided in Article 9, paragraph (1), which states that tourism-focused management of coastal boundary areas should be undertaken in locations that possess distinctive natural features, aesthetic value, and significant tourism potential. These areas are specifically identified as being destinations for both domestic and international visitors and therefore require targeted planning and stewardship. Article 18 outlines the technical provisions governing the construction of buildings within coastal boundary zones. It mandates that all forms of construction must comply with established technical standards for coastal development. Permissible developments are limited to essential infrastructure, which includes facilities supporting the protection of local conservation areas, public space infrastructure, disaster mitigation facilities, tourism-related amenities, and installations intended for central government functions.

The technical standards for construction in these zones must account for a range of factors. These include the geographical characteristics of the site, environmental sustainability, and the region's ecological carrying capacity. Additionally, risk assessments related to natural disasters and mitigation strategies must be

incorporated. Considerations must also be given to human and vehicular circulation, waste management, building height regulations, and the types of materials used. Further requirements pertain to the inclusion of building utilities, long-term maintenance protocols, effective drainage systems, and the aesthetic impact of any development. Altogether, this regulation serves as a legal instrument to ensure that development along coastal boundaries is carried out in a controlled, environmentally sensitive, and functionally appropriate manner, particularly in support of sustainable tourism initiatives. It reflects a governance approach that balances development needs with conservation priorities, in line with broader spatial planning objectives (Pengelolaan Sempadan Pantai Dan Sempadan Sungai, 2022).

Article 36 of the Tourism Facility Certification and Qualification Regulation Number 30791 Dated 31 May 2019 (Regulation on Tourism Facilities, 2019).

Article 36 of Regulation Number 30791, issued on 31 May 2019 concerning the Certification and Qualification of Tourism Facilities, outlines the specific standards and criteria for camping areas, with a strong emphasis on environmental sustainability, spatial order, and visitor comfort. A camping area is described as an enclosed and demarcated space, bounded by physical barriers such as fences, walls, or plantings, which ensure both internal and external security. All buildings within the camping area must utilize environmentally friendly construction materials, and the area itself should be well-drained and planted with a variety of green vegetation, mimicking the appearance and ecological value of unused land. Supporting facilities may be developed as required—such as reading corners, recreational areas, entertainment spaces, and dining zones—provided they do not interfere with the tranquillity of nighttime camp activities. Road access for vehicles must be designed to minimize dust intrusion, aligning with existing environmental conditions.

In terms of spatial planning for accommodation, each camping unit must occupy a minimum area of 80 square meters. This space may accommodate tents, tent cars, caravans or campervans, motor caravans, or bungalows. The regulation further stipulates that bungalows may comprise no more than 20 percent of the total number of camping units within any given camping area, thereby ensuring the preservation of open space and the prioritization of more mobile and low-impact accommodation types. Facilities such as parking areas, reception spaces, and other related service zones are to be constructed based on functional requirements. Additionally, the area designated for accommodation may be extended to include essential communal facilities. For every ten camping units, separate male and female toilet and shower facilities must be provided, along with sinks and power outlets. Moreover, for every five camping units, there should be at least one food preparation area or laundry facility to support basic visitor needs.

The regulation also outlines a set of essential services that must be available to all visitors. These include on-site retail or sales units, appropriate disposal points for caravan or campervan toilet systems and wastewater, access to electrical connections for each camping unit, and the provision of both hot and cold drinking water. Collectively, these provisions are intended to support not only the functionality and comfort of the camping experience but also the ongoing maintenance and repair needs of caravans, campervans, and motor caravans, whether owned by domestic or international tourists. The regulation reflects a comprehensive and environmentally conscious approach to campsite design and operation, promoting tourism facilities that are both sustainable and aligned with contemporary visitor expectations.

Observation and Interview Results

Madasari Beach is situated along the southern coastal region. The beach is part of the natural wealth of Pangandaran and holds significant potential for further tourism development. Its strategic location and accessibility make it an attractive destination for both domestic and international visitors. In terms of land ownership, Madasari Beach is under village ownership, indicating a strong opportunity for collaborative management and development involving the village authorities, local community, and other stakeholders. According to the available data, the area spans approximately 151.5 hectares, offering ample space for the development of supporting tourism facilities, environmental conservation initiatives, and community-based activities. However, there is currently no further information regarding land certification status, which is a crucial aspect to address to ensure legal certainty and compliance with relevant regulations during future development plans. Additionally, other sections in the dataset — such as identified issues, proposed interventions, and available funding for management or development — remain unfilled. This highlights the need for more comprehensive data collection to formulate a well-rounded and sustainable tourism development strategy.

Its primary attraction lies in its natural and exotic beach landscape. In addition to Madasari Beach itself, the surrounding area features several other appealing beaches, including Sebrotan Beach, Karang Seugeuh,

Karang Pandan, Legok Gandu, and Batu Leuit. These beaches add to the overall appeal of the region and present a significant opportunity for integrated tourism development. The area holds considerable potential in terms of tourist attractions. Its geographical features—comprising sandy and rocky coastal areas—offer a distinctive natural setting. These beaches are well-suited for a range of activities such as coastal recreation, nature exploration, and environmental education. However, this potential has yet to be fully realized. Several locations remain underdeveloped, and there has been no comprehensive documentation or inventory of the tourism activities available. In terms of uniqueness and aesthetic value, Madasari Beach possesses distinctive features at the provincial level. Its geological character and landscape form a visual identity rarely found in other regions, particularly outside West Java.

Nevertheless, this uniqueness has not yet been elevated to a national scale. Strategic promotion and thoughtful packaging of attractions are needed to enhance the area's competitiveness, both nationally and internationally. The social, cultural, historical, educational, and philosophical values embedded in the region have also not been significantly explored. These local values could serve as important elements in strengthening the character of the destination and attracting visitors seeking authentic experiences. The absence of studies and development initiatives in these areas means these values have not yet been incorporated into the tourism offering.

There are several amenities issues in the Madasari Beach area, including inadequate waste management, the lack of mapping and documentation of potential tourism activities, and the limited effort to highlight local uniqueness. These challenges directly affect visitor comfort and the overall image of the destination. Suggested interventions include improving waste management, developing attractions based on local potential, educating the community on sustainable tourism, and conducting studies to explore and package cultural and historical values. Through funding from the 2023 regional budget (APBD), the local government has proposed several follow-up actions, such as the development of beaches surrounding Madasari, environmental clean-up efforts, and studies on attraction development. These initiatives are intended to serve as the foundation for transforming Madasari Beach into a high-quality tourist destination that integrates natural beauty, cultural heritage, and educational value. It was observed that the main access points lack clear signage, potentially confusing visitors. To remedy this, it is recommended that a dedicated signage system or gateway structure be constructed to indicate entry and exit paths better.

Additionally, the main gate itself is noted to lack distinctive features that reflect the local design identity, diminishing the site's cultural impression upon arrival. A proposed intervention involves incorporating local design elements into the entrance structure, thereby enhancing the overall aesthetic and sense of place. Another critical observation concerns the absence of a prominent name board for the destination, which could otherwise help visitors recognize and identify the area with ease. It is suggested that such signage be both visible and legible, possibly complemented by an area map to assist orientation. The site map, though present, is deemed inadequate in its current form. While it offers some guidance, it fails to communicate the spatial layout and attractions. Enhancing the map with detailed information about visitor points of interest and placing it strategically throughout the site is considered essential.

Furthermore, the analysis reviews the toilet facilities, indicating that they generally follow the Standard of public toilets in Indonesia, catering to men, women, and persons with disabilities. However, recommendations include improved cleanliness, better maintenance schedules, and the presence of dedicated hygiene staff, ideally operating on a shift basis to ensure consistent service. Across all points, the issues identified are accompanied by actionable interventions, each of which is supported by a proposed funding source—the APBD (local government budget)—and is scheduled for attention within the 2023 planning cycle. The approach reflects a holistic commitment to improving the visitor experience at Pantai Madasari, with a focus on accessibility, signage, cleanliness, and cultural integration.

The primary activities listed include those based on natural features, such as camping, sightseeing, and nature photography. Cultural programs are also mentioned, such as traditional martial arts performances (e.g., Pencak Silat) during cultural events like Hari Jadi Pangandaran and Festival Madasari. These suggest an existing link between tourism and local heritage, though the document points to a lack of structured programming and promotional materials. In terms of thematic tourism, the data indicates limited development. Although the site holds potential for more focused experiences—such as eco-tourism or marine-based activities—no comprehensive thematic programs have been executed to date. Likewise, creative tourism, often a hallmark of community engagement through arts, crafts, and gastronomy, remains underdeveloped. The table notes the absence of sub-sectors and organizer information, suggesting a gap in coordination and management. An especially underutilized area is knowledge-based tourism, which could involve educational activities such as guided tours, nature walks, or conservation efforts. A recurring issue is the lack of clear and accessible

information for visitors. The document highlights that tourists are often unaware of what facilities and activities are available. As a result, one proposed intervention is the creation of brochures or promotional materials to help communicate the various opportunities for engagement at the site. Such efforts could improve the destination's image and usability, especially for new or international visitors. In general, the analysis reveals an untapped potential for tourism programming at Pantai Madasari. While some elements exist—particularly those drawing from nature and culture—they are sporadic and lack integration. With appropriate investment in thematic, creative, and knowledge-based tourism, supported by effective promotion and local partnerships, the site could greatly expand its appeal.

Access to Madasari Tourist Attraction is currently supported by three main routes: Desa Masawah Street, Bojong Salawe Street, and Cimerak Street. However, several challenges hinder optimal accessibility. These include the lack of street lighting along the access roads and varying road conditions, with some sections being paved while others consist of stone surfacing. Road widths range from 4 to 6 meters, and certain segments are damaged or inadequately lit. In response, local authorities plan to install additional street lighting and road barriers, with funding expected from the regional budget (APBD) over a 1–2 year period. Travel times to Madasari vary depending on departure points: approximately 5–6 hours from Bandung (195–215 km), 1.5 hours from Pangandaran (40 km), and around 2–2.5 hours from Banjar (75 km). The nearest popular tourist hub, Batukaras, is about 20 minutes away. However, the quality of the road network still poses an issue for smooth travel. Public transportation is currently unavailable directly to the site, requiring visitors to transit through Cijulang Terminal. To improve connectivity, the development of dedicated travel routes from key cities such as Bandung and Pangandaran has been proposed. Signage remains limited, with directional signs only found at Cijulang Terminal. A mapping initiative and additional sign installation are planned to enhance wayfinding.

Furthermore, the site lacks basic accessibility features for the elderly and persons with disabilities, including ramps, adapted toilets, and tactile paths. Within the site, the roads are mostly paved, yet some areas lack safety barriers or glow-in-the-dark markings, which raises safety concerns. Lastly, promotional efforts remain insufficient, particularly in engaging international visitors. Information is not yet provided in English, and consistent marketing strategies are lacking. Strengthening digital outreach and producing multilingual promotional materials are recommended as part of a more inclusive communication approach.

Various aspects of tourism service quality and management at a destination, with a strong focus on operational standards, visitor services, human resources, and institutional readiness. Among the services identified are hospitable visitor interaction (Pelayanan yang Someah Hade ka Semah), program and event management, adherence to operational standards, and the capability of human resources at the destination. Several elements, such as standard operating procedures (SOPs), environmental management, cleanliness, complaint handling, and safety procedures, are referenced, though many remain either underdeveloped or unimplemented. A noteworthy issue highlighted in the dataset is the lack of competency among local tourism stakeholders, particularly in hospitality skills and foreign language proficiency. This is considered a significant barrier to delivering high-quality experiences for visitors. In response, a capacity-building program for tourism human resources has been proposed and partially implemented, with support from regional funding (APBD) in April 2023. Despite some progress, several important services remain either absent or underutilized. For instance, there are currently no formal agreements (PKS) with community groups or private stakeholders, and many safety and communication tools—such as emergency procedures, guidebooks, promotional brochures, and insurance coverage for operators—are missing.

Additionally, essential partnerships with medical professionals and institutions have not yet been established, although such collaborations are vital for enhancing visitor safety and trust. To address these gaps, interventions like Service Design and the principles of Sapta Pesona (the seven charms of Indonesian tourism) are proposed. However, the majority of these recommendations have yet to be assigned a clear implementation timeline or budget. This indicates that while the strategic direction is in place, execution remains limited and requires further coordination, resource allocation, and institutional commitment.

Tourist Attraction Area Planning

In the development of tourism, we must consider the users and managers of the tourist attraction after the destination is developed. The managers of this tourist attraction are mainly the community in the Madasari Beach tourist attraction. In the zone design, there is a caravan unit that can be used directly by the community as a managed tourist attraction. In addition, the community can also utilize the campervan area by renting out tents to other visitors who come. The manager has a special road to carry out maintenance related to tourist attractions and related to the facilities available at the tourist attraction. The road is intended to facilitate the manager in carrying out maintenance and other operational activities at the tourist attraction. In addition, in

the public facilities area, there are food stalls and souvenir shops that can be used by the community in its direct management. Area users can be said to be visitors who come to the related tourist attraction. Public facilities and related tourist attractions have a determination indeed for visitors who come to the Madasari Beach tourist attraction.

There are some zones related to fulfilling the needs of tourists when they vacation at Madasari Beach. The division of Zones in the land is divided into four areas, namely the campervan ground area, public camping area, public facilities area, and parking area. The campervan ground area is used as the main attraction in this area, while other areas are supporting areas to meet the needs of visitors.

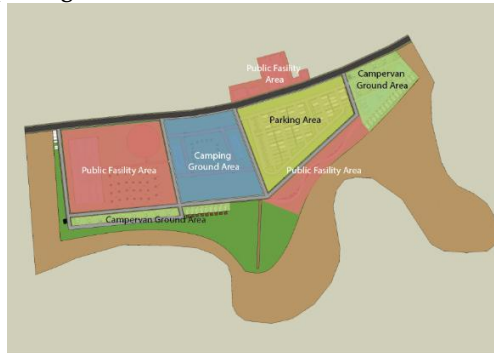


Figure 11. Zoning Plan Area

Source: Research data, 2024

Madasari Beach needs to overhaul some of the facilities and infrastructure, such as the existing roads and pedestrian areas. The existing road on the site is currently solid earth, which presents some challenges in terms of comfort and sustainability. Hence, an intervention in road infrastructure improvement is required. One of the proposed solutions is the addition of block paving. The use of block paving not only improves road comfort and accessibility but also plays an important role in maintaining natural sustainability, as block paving allows infiltration of rainwater into the ground, reduces surface runoff, and reduces the risk of soil erosion (Benson & Bradshaw, 2011).

In addition to improving the road with paving blocks, it is also necessary to consider the construction of pedestrian walkways equipped with guiding blocks. These guiding blocks are designed to meet the needs of road users, especially for people with visual disabilities, so that they can move more safely. The implementation of disability-friendly pedestrian infrastructure is part of the effort to create an inclusive environment and support the mobility of all levels of society. Therefore, the improvement of road infrastructure and the construction of user-friendly pedestrian areas are important points to improve the quality of life and environmental sustainability in the Madasari Beach area.



Figure 12. Zoning Plan Area

Source: Research data, 2024



Figure 13. Zoning Plan Area

Source: Research data, 2024

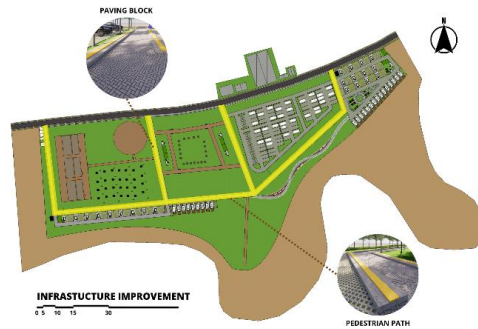


Figure 14. Infrastructure Improvement

Source: Research data, 2024

The existing road on the site is 2.5 meters wide, which means that the vehicle lane can only accommodate one car. This condition poses several challenges in terms of traffic efficiency and safety within the site area. Therefore, there is a need to realign the vehicle lanes to improve comfort and safety for all users. One of the steps proposed by the author is to plan two dedicated lanes, the vehicle lane and the service lane. Vehicle lanes are specifically designed for user mobility within the site. This lane will be focused on the smooth traffic of private vehicles so that users can move places easily and safely.

Meanwhile, the service lane will be dedicated to the needs of public facilities such as the supply of goods, waste disposal, and other supporting activities. This arrangement is expected to separate lanes with different functions, thereby reducing the risk of accidents and increasing operational efficiency. This approach is supported by literature that shows the importance of lane segregation in traffic planning to improve safety and efficiency. The separation of vehicle lanes and service lanes can reduce conflicts between vehicles that have different purposes, thereby improving overall traffic flow (Litman, 2019). With these two dedicated lanes, it is expected that traffic within the site will be more organized, providing greater comfort and safety for all road users.

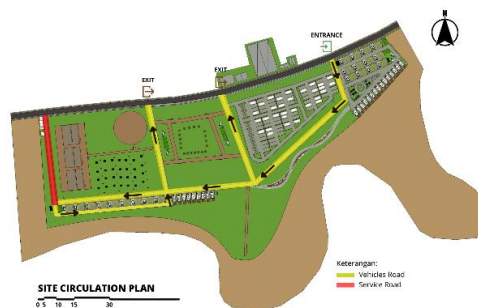


Figure 15. Circulation Plan of the Area

Source: Research data, 2024

Campervan Ground tourist attraction is a tourist attraction that has two functions, namely as a tourist attraction and as an accommodation for visitors who want to rest at related tourist attractions. The Campervan Ground area itself is divided into 2, namely the Campervan Ground A and Campervan Ground B areas. Each area has two types of campervan ground units, namely campervan ground for vehicles with separate tents and caravans. In the Campervan Ground A area, there are several parts, namely campervan units, caravan units, toilet facilities, and garden areas. Meanwhile, in the Campervan Ground B area, there are only campervan units and caravan units, this is because the distance between public facilities and other areas is quite close to the Campervan Ground B area.



Figure 16. Campervan Ground Area Design A.
Source: Research data, 2024



Figure 17. Campervan Ground Area Design B.
Source: Research data, 2024



Figure 18. Caravan Unit
Source: Research data, 2024



Figure 19. Campervan Unit
Source: Research data, 2024

There is a need for additional facilities to support the needs of users in the Madasari Beach area. These include a prayer room, health room, management office, security post, and souvenir shop. The prayer room is very important to fulfill the spiritual needs of visitors who want to carry out their worship while on the beach. The provision of health rooms aims to provide basic medical services and first aid in accidents, to increase the safety and comfort of visitors. The management office will serve as the administrative and coordination center for all operations at the beach area, ensuring that all services and facilities are functioning properly. A security post is also a vital facility that needs to be provided, given the importance of maintaining security and order in the beach area. The presence of a security post will assist in monitoring and handling any emergencies or incidents that occur, as well as providing a sense of security for visitors. In addition, a souvenir shop also needs to be added to support the local economy aspect by providing various souvenir items that can be purchased by visitors as a memento. This shop not only functions as a place to shop but also as a medium for promoting local culture through the products sold. The addition of these facilities not only aims to fulfill the basic needs of users but also to increase the attractiveness of the Madasari Beach area as a comfortable and safe tourist destination. This effort is expected to support sustainable tourism development and make a positive contribution to the local economy.



Figure 20. Public Facilities Plan
Source: Research data, 2024

With the development of campervan grounds, there will be an increase in air pollution, which is why vegetation is important to negate the impact of the development. Vegetation refers to the use of plants and plant elements in the design and construction of the built environment. Vegetation not only serves as an

aesthetic element that beautifies and adds artistic value to a space but also has significant functional benefits. These benefits include improved air quality through the process of photosynthesis, which reduces air pollution, temperature control by providing a natural cooling effect through evaporation and transpiration, and noise reduction through sound absorption. In addition, vegetation also plays a role in water conservation by reducing rainwater runoff and increasing water infiltration into the soil. Vegetation in the Madasari Beach area plays a very important role in the surrounding environment. From the observation, it can be identified the types of existing plants that are still part of the landscape of the area.

Carrying Capacity Analysis

There are four types of visitor needs in a campervan. Those areas were the Public Facility, Public Camp Area, Parking Area, and Campervan Ground Area. While the Public Camp Area and Parking Area have 1 area each, the Campervan Ground Area and Public Facility have more than one, that is dispersed across the land. There are 2 Campervan Ground Areas separated in the far east and southwest of the site. For easier analysis, the Far East given code (4.a.) and the Southwest given code (4.b.). There are also three separate Public Facilities at the north, east, and southeast, dispersed around for easier access by visitors. For easier analysis, the north given code (1.a.), the east given code (1.b.), and the southeast given code (1.c.).

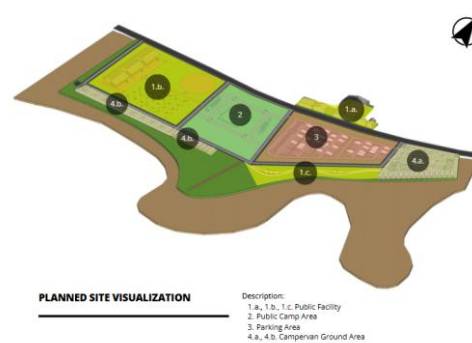


Figure 21. Site Visualization

Source: Research data, 2024

Every area has its carrying capacity, following the size of each area. Physical Carrying Capacity is a tool for determining the maximum physical limits of each area to minimize environmental damage, such as habitat destruction or increased pollution. Here is the formula (Salusu et al., 2023):

$$PCC = A \times \frac{V}{a} \times RF$$

A = Calculated zone (m2)

V = Visitor

a = Space every visitor needs (m2)

RF = Total operational hours of destination divided by average length of visit

Based on the information given by the interview, the total operational hours of Madasari Beach are 24 hours, with the average length of visitors there being about 8 hours. Total visitors a day can reach up to 150 visitors. By this, we must find RF first by dividing the total operational hours by and average length of visit. So RF is 3. For average space needed for every visitor is taken at 65 m2 (Achmad Husaini et al., 2018). Every area has its total area. For Public Facilities, 1.a. have around 131 m2, 1.b. have around 628 m2, 1.c. have around 190 m2; Public Camp Area around 470 m2; Parking Area around 507 m2; and last Campervan Ground Area, 4.a. have around 221 m2 and 4.b. have around 100 m2.

Table 2. Physical Carrying Capacity

No	Area	A (m ²)	V	a (m ²)	RF	PCC
1	Public Facilities					
	1. a.	131				907
	1.b.	628				4347.7
	1.c.	190				1315.4
2	Public Camp Area	470	150	65	3	3253.9
3	Parking Area	507				3510
4	Campervan Ground Area					
	4. a.	221				1530

No	Area	A (m ²)	V	a (m ²)	RF	PCC
4.b.		100				692.3
Total PCC						15556.3

Source: Research data, 2024

Table 2 illustrates the Physical Carrying Capacity (PCC) for various designated zones within a recreational or tourism area. The PCC is a measure used to estimate the maximum number of individuals that can physically occupy a site at a given time without causing degradation to the environment or reducing the quality of the visitor experience. This calculation is based on several variables: the total area available (A), the average space required per visitor (a), the average length of visit (V), and the rotation factor (RF), which reflects how often different groups of visitors can reuse an area within the same day. The first major category is the Public Facilities, which is further divided into three sections: (1.a.), (1.b.), and (1.c.). Section (1.a.) comprises an area of 131 square meters and has a calculated PCC of 907 individuals. Section (1.b.), being substantially larger at 628 square meters, can accommodate 4,347.7 individuals. Meanwhile, section (1.c.) covers 190 square meters and allows for a PCC of 1,151.4 individuals. These values suggest that section (1.b.) serves as the primary facility hub, supporting a significantly higher number of visitors.

The Public Camp Area is allocated 470 square meters and is calculated using a visit duration (V) of 150 minutes, an average area requirement (a) of 65 square meters per person, and a rotation factor (RF) of 3. This results in a PCC of 2,353.9 individuals. This figure indicates the space's potential to accommodate a moderate number of users, likely due to the larger space needed per visitor in camping zones. The Parking Area, with a total area of 507 square meters, supports a PCC of 3,510. The high carrying capacity in this section is indicative of efficient land use and the relatively small space required per vehicle or visitor. The final category is the Campervan Ground Area, which is subdivided into two zones: (4.a.) and (4.b.) Zone (4.a.) encompasses 221 square meters and has a PCC of 1,530, while zone (4.b.), with an area of 100 square meters, accommodates a PCC of 692.3. These values highlight the accommodation potential for campervans, a crucial component in supporting overnight stays and extended visits. Overall, the Total Physical Carrying Capacity (PCC) across all areas is calculated at 15,536.3 individuals. This comprehensive assessment provides vital data for site management, enabling planners to regulate visitor flow, optimize infrastructure usage, and uphold environmental sustainability.

Disaster Mitigation Discussion

Madasari Beach, located on the tectonically active southern coast of Java, presents a high risk for geological hazards, particularly earthquakes and tsunamis. Given this vulnerability, disaster mitigation becomes a fundamental consideration in the development of tourism infrastructure, especially for a coastal-based project such as the campervan ground. The current planning document reflects an initial awareness of disaster risks, as seen in the inclusion of an evacuation route leading westward and the placement of signage indicating actions to take during a disaster. Furthermore, the development aligns with Pangandaran Regent Regulation No. 80 of 2022, which explicitly allows the use of coastal areas for tourism only when integrated with mitigation infrastructure, including evacuation routes, drainage, waste systems, and building guidelines that account for geographical risks. Despite these positive steps, the disaster mitigation strategy remains limited and primarily regulatory. Several key components of effective disaster preparedness are either underdeveloped or missing. For example, there is no mention of an early warning system, such as tsunami sirens, or partnerships with agencies like BMKG for real-time disaster alerts. Moreover, there are no safe zones or vertical evacuation structures planned within the site, which are crucial given the short response window in tsunami events. The evacuation signage, while helpful, may not be sufficient for visitors unfamiliar with the area or the local language, particularly during nighttime or in a panic situation. Visitor education and emergency drills are also not part of the current plan, creating a gap in community and tourist preparedness.

Infrastructure resilience is another area of concern. While the use of block paving is proposed for roads to improve sustainability and infiltration, there is limited discussion on the structural resistance of public facilities (toilets, prayer rooms, shops) to earthquake tremors. The planning should ensure that critical facilities are constructed using disaster-resistant designs and materials. Furthermore, the beach's accessibility must also consider emergency mobility—routes for ambulances or rescue vehicles should be designated and free from obstructions, especially in high-density camping or parking areas. To improve the disaster mitigation component, several recommendations can be proposed. First, installing an integrated tsunami early warning system linked to local and national monitoring agencies will significantly improve response time. Second, building elevated shelters or evacuation towers within close range of the beach area can provide vertical evacuation options. Third, training local tourism operators and guides on evacuation protocols, first aid, and

risk communication would empower the community while increasing tourist confidence. Fourth, distributing multilingual evacuation maps and disaster response guides—physically and digitally—can enhance visitor awareness. Lastly, embedding mitigation into the site design, such as by maintaining green buffer zones (vegetation belts) and enforcing development setbacks, can reduce environmental and structural risks during extreme events.

Design of Campervan Ground Area of Madasari Beach Tourism Attraction

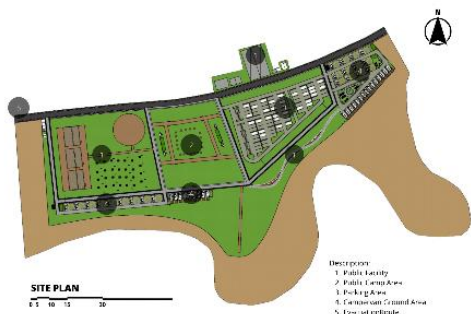


Figure 22. Site Plan
Source: Research data, 2024

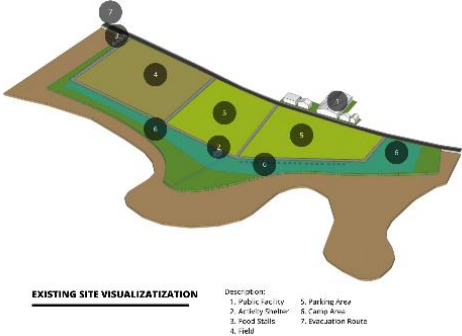


Figure 23. Visualisation of Existing Site
Source: Research data, 2024

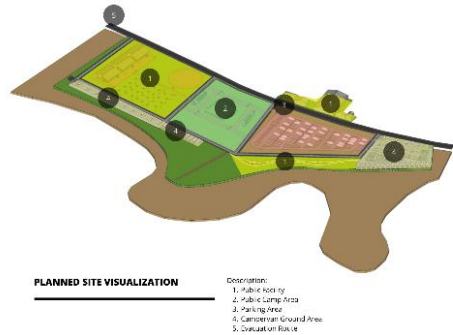


Figure 24. Visualisation of the Site Plan
Source: Research data, 2024



Figure 25. Visualisation of Public Camping Area
Source: Research data, 2024



Figure 26. Visualisation of Public Facilities
Source: Research data, 2024



Figure 27. Parking Area Visualisation Source:
Researcher's
Source: Research data, 2024

CONCLUSION

Madasari Beach tourist attraction has a huge development potential, this is seen from the existing conditions and the results of data collection, which shows the undeveloped tourist attraction. The results of data collection based on the 5A tourism variables show that there is development potential in these variables. This is reinforced by the position of the development of tourist attractions that are in the involvement stage, which is the stage where tourist attractions begin to be developed by the surrounding community with the resources owned by the community (Butler, 1980).

With this research, the development of Madasari Beach can be implemented further, following the requirements of the West Java Tourism Authority. This design shows that the campervan ground can be the center of all activities inside Madasari Beach. This design also supports other attractions around and can be the main accommodation for tourists visiting Madasari Beach. While this design can be a guide to developing campervan grounds, there is still room for more research regarding stakeholders, operational tourism, management tourism, and tourist management. This research is needed so that this design can be implemented fully and optimally. This development can also be a reference to other developments, especially the development of marine tourism, sustainable tourism, or, more specifically, campervan development in the future.

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