# Landscape Arrangement of Cacalan Beach Tourism Area with Natural Building Concept in Sukowidi Village

**I Ketut Hendra Wiryasuta [1*], Enes Ariyanto Sandi [2], Mohamad Galuh Khomari [3]**

[1,2,3] Department of Civil Engineering, Politeknik Negeri Banyuwangi
* *hendrawiryasuta@poliwangi.ac.id*

**ABSTRAK**

*Pariwisata merupakan salah satu sektor yang menjadi pondasi ekonomi warga Kabupaten Banyuwangi. Pantai Cacalan merupakan salah satu destinasi wisata alam di pesisir timur Kabupaten Banyuwangi, tepatnya di Desa Sukawidi. Saat ini, pengelolaan kawasan wisata Pantai Cacalan dikelola oleh Kelompok Sadar Wisata (Pokdarwis). Selain manajemen operasional, Pokdarwis juga memiliki peran untuk mengembangkan dan mengelola kawasan Pantai Cacalan. Terbatasnya konsep perencanaan dan pendanaan menyebabkan pengembangan Pantai Cacalan tidak terkonsep dengan baik. Oleh karena itu, perencanaan lansekap sangat penting untuk mengoptimalkan pemanfaatan ruang wisata. Ruang kawasan wisata Pantai Cacalan saat ini terbagi menjadi 3 area, yaitu area pintu masuk depan dimana terdapat tempat parkir dan pos jaga, area tengah yang merupakan tempat Usaha Mikro dan Kecil (UMK), dan area dalam yang merupakan lokasi utama wisata pantai Cacalan. Melalui penataan lanskap kawasan Pantai Cacalan, pemanfaatan ruang wisata di Pantai Cacalan dapat ditingkatkan. Konsep pengembangan natural building telah menjadi ikon sehingga dapat meningkatkan kunjungan wisatawan. Kegiatan pengabdian masyarakat dilakukan dengan melakukan survei pemetaan, perencanaan lanskap dengan konsep konstruksi alam, dan pembuatan maket 3D. Hasil penataan kawasan wisata Pantai Cacalan berupa gambar 2D dan 3D, serta maket 3D yang telah dibuat, dapat dijadikan acuan untuk pengembangan kawasan tersebut. Oleh karena itu di masa depan, pengembangan pengaturan daerah dapat dilakukan dengan fokus sesuai dengan apa yang telah disepakati dan direncanakan.*

*Keywords* — *Pengaturan, cacalan, lanskap, bangunan alam, pariwisata*

**ABSTRACT**

*Tourism is one of the sectors that become an economic foundation of the residents of Banyuwangi Regency. Cacalan Beach is one of the natural tourist destinations on the eastern coast of Banyuwangi Regency, precisely in Sukawidi Village. Currently, the management of the Cacalan Beach tourism area is managed by the Tourism Awareness Group (Pokdarwis). In addition to operational management, Pokdarwis also has a role to develop and manage the Cacalan Beach area. The limited concept of planning and funding caused the development of Cacalan Beach not well conceptualized. Therefore, landscape planning is very important to optimize the use of tourist space. The space of the Cacalan Beach tourism area is currently divided into 3 areas, namely the front entrance area where there is a parking lot and guard post, the middle area which is the place for Micro and Small Businesses (UMK), and the inner area which is the main location for Cacalan beach tourism. Through the arrangement of the landscape of the Cacalan Beach area, the utilization of tourist space on Cacalan Beach can be increased. The concept of natural building development has become an icon so that it can increase tourist visits. Community service activities are carried out by conducting mapping surveys, landscape planning with the concept of natural construction, and making 3D mockups. The results of the arrangement of the Cacalan Beach tourism area in the form of 2D and 3D images, as well as 3D mockups that have been made, can be used as a reference for the development of the area. Hence in the future, the development of regional arrangements can be carried out with a focus in accordance with what has been agreed upon and planned.*

*Keywords* — *Arrangement, cacalan, landscape, natural building, tourism*

## 1. Introduction

The tourism sector is one of the sectors that become the economic foundation of the habitant of Banyuwangi Regency. To maintain economic resilience in the tourism sector, it is necessary to perform good planning, both in terms of infrastructure and resource planning. Tourism infrastructure planning needs to be done carefully to anticipate environmental, social, and cultural problems.

Cacalan Beach is one of the natural tourist destinations on the eastern coast of Banyuwangi Regency. Cacalan Beach, located in Sukowidi Village, Kalipuro District, is a beach that is directly opposite the Bali Strait. Cacalan Beach was opened as a tourist area in 2016. Previously, this area was an unproductive swamp area. Currently, the management of the Cacalan Beach tourist area is managed by the Tourism Awareness Group (Pokdarwis). In addition to operational management, Pokdarwis also has a role to develop and manage the Cacalan Beach area. Limited funding and planning concepts resulted in the development of Cacalan Beach being not well conceptualized. Landscape planning is very important to optimize the use of tourist space.

The space of the Cacalan Beach tourist area is currently divided into 3 areas, namely the area in front of the entrance where there is a parking lot and guard post, the middle area which is a place for Micro and Small Businesses (UMK), and the inner area, which is the main location for Cacalan Beach tourism (can be seen in Fig. 1). There are several interesting spots on Cacalan Beach that visitors can enjoy, including sunrise spots, canoes, boat tours, camping areas, and culinary delights.



Figure 1. Cacalan Beach Tourism Location Arrangement

The utilization of tourist space has not been carried out optimally because of the absence of previous spatial planning. The initial concept of development of Cacalan Beach tourism is the concept of nature-based tourism, but due to the lack of good planning, the current development pattern is out of the initial concept.

## 2. Targets and Output

According to Hubbard and Kimball in Laurie (1990), a landscape is an artist whose most important function is to create and preserve the beauty of the environment around where humans live and in the wider natural landscape. Each place has a different form and character of the landscape, either naturally or artificially. The natural landscape character consists of many types, including mountains, hills, valleys, forests, grasslands, streams, swamps, sea lakes, and deserts. Landscape planning is an adjustment between the landscape and the program that will be developed to maintain ecosystems and landscape views so that optimal use of space is achieved in the tourist area on Cacalan Beach.

The basic principle of natural building is the need to reduce the environmental impact of buildings and other supporting systems, without compromising the comfort, health, or aesthetics of the building itself. To be more sustainable, natural buildings emphasize the use of materials that are abundantly available, renewable, and reusable or recycled materials. The use of rapidly renewable materials is a focus in this regard. In addition to relying on natural building materials, an emphasis on architectural design is an important thing to note.

Thus, to overcome the problem of non-optimal use of space and the absence of good layout planning in the Cacalan Beach area, it is necessary to plan the landscape of the Cacalan Beach area in Sukowidi Village.

In accordance with the main targets/targets above, the output specifications of this activity are:

a. Through landscape arrangement, the arrangement of the Cacalan Beach area can increase the utilization of tourist space on Cacalan Beach.

b. The concept of natural building development can become an icon of Cacalan Beach so that it can increase tourist visits.

c. The results of the arrangement of the Cacalan Beach tourist area can be used as a reference for development in the area.

## 3. Method

In this activity, several stages will be carried out which include site surveys, area mapping, drawing landscape plans, and making 3D mockups. The details of the activities are shown in Figure 2.
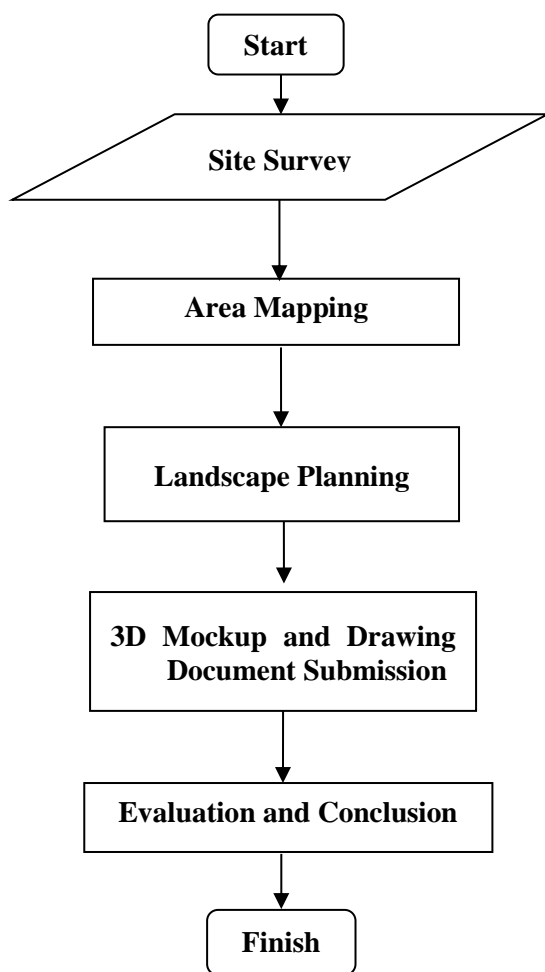
```
        ┌─────────┐
        │  Start  │
        └─────────┘
             │
        ╱─────────────╲
        ╲ Site Survey ╱
         ╲───────────╱
             │
    ┌─────────────────┐
    │  Area Mapping   │
    └─────────────────┘
             │
    ┌─────────────────┐
    │ Landscape       │
    │ Planning        │
    └─────────────────┘
             │
    ┌─────────────────┐
    │ 3D Mockup and   │
    │ Drawing         │
    │ Document        │
    │ Submission      │
    └─────────────────┘
             │
    ┌─────────────────┐
    │ Evaluation and  │
    │ Conclusion      │
    └─────────────────┘
             │
        ┌─────────┐
        │ Finish  │
        └─────────┘
```

Figure 2. Flowchart of Activity Implementation

The stages of activities in this service are as follows:

a. Survey

In this stage, several surveys and determination of the location of the problem are carried out which are outlined in 2 stages, namely:

1) Survey of service facilities (locations)
   Conduct a survey to identify tourist areas that need to be landscaped. The results of several surveys of the Cacalan Beach Tourism location need to be a priority for planning arrangements.

2) Facilities and infrastructure
   a) Prepare laboratories/workshops for service activities.
   b) Prepare the tools and materials used.
   c) Preparation of technicians and preparing the tools needed in community service.

   At the preparation stage, the facilities and infrastructure are ready for use.

b. Area Mapping
   The mapping was carried out in order to map the situation in the Cicilan Beach Tourism area. The output of this mapping is in the form of a topographic map that shows the contours and details of the shape of the buildings in the area. Based on the results of the situation mapping output, are used as a reference for making a landscape design for the Cacalan Beach area.

c. Landscape Planning
   Landscape arrangement planning includes more optimal spatial utilization arrangements. Spatial planning is carried out in all areas, namely outdoor/parking areas, MSME areas, and tourist areas. The entire arrangement uses the concept of natural building, with this concept becoming a tourism icon on Cacalan Beach.

d. 3D Mockup Product Creation
   Furthermore, the manufacture of 3D mockup products is carried out based on the results of the planning of the Cacalan Beach area planning. 3D mockups made in the woodworking workshop area. The 3D mockup will be submitted to the Cacalan Beach Pokdarwis.

## 4. Discussion

The implementation of community service regarding the Landscape Arrangement of the Cacalan Beach Tourism Area with the Natural Building Concept in Sukowidi Village is one solution to the problems currently faced by the Cacalan Beach Pokdarwis. During development from 2012 to 2022, there is no clear concept related to the development of the area. Pokdarwis in regional development is only situational depending on the availability of the budget. The concept of development also does not have a clear direction regarding the arrangement of the landscape of the region. Through this service, it is hoped that the development of the Cacalan Beach area can be better and in accordance with the concept that has been created.

The implementation of community service is carried out in 5 (five) stages, namely: site survey, area mapping, landscape planning, making 3D mockups, and submitting 3D drawings and mockups.

a. Site Survey

The location survey was conducted to determine the boundaries of the Cacalan Beach tourist area. Based on the results of the survey conducted, it was identified that the eastern area is directly adjacent to the Bali Strait. On the east side, it can be seen that along the Cacalan Beach route, abrasion is caused by large waves. On the north and south sides, it is bordered by the coastal area which is still within the scope of Cacalan Beach. While the western part is directly adjacent to PT. Lundin Industry Invest (LII).



Figure 3. Existing Condition of Cacalan Beach

Furthermore, from these boundaries, in order to do the mapping, it is necessary to determine the benchmark point (benchmark) that will be used as a reference at the time of mapping. The number of stake points used for mapping the situation of the Cacalan Beach area is 5 stake points.

b. Area Mapping

Furthermore, a detailed mapping of the situation in the Cacalan Coastal Area was carried out. The tools used to map the situation are the GM-55 Total Station Aircraft/Tool. The Total Station tool is a tool that is able to map out the details of the situation in full and in detail according to the conditions in the field. Next, the surveyor places the total station tool at point one (BM1) and stake 2 (BM2), and stake 3 (BM3) paired with polygon prisms as backsight and foresight points. At peg point 1, the magnetic azimuth angle was measured to determine the magnetic north direction of the measurement. This is important so that the mapping results can produce images that are close to the direction at the mapping location. Furthermore, detailed mapping of the situation at each point was carried out by measuring the detailed situation including area boundaries, rivers/swamps, wooden bridges, halfway houses/triangles, UMK kiosk locations, parking, entrances, coastlines, and others according to conditions in the field.

After doing the mapping, the next step is to process the data from the mapping that has been done. The steps taken are as follows:

1) Downloading shot results from Total Station GM-55;
2) Perform manual data processing using TopconLink and MS applications. Excel based on the results of the Total Station data export.
3) Plotting the coordinate points based on the processed data manually on the MS. Excel to Autocad application.
4) Next, a drawing is carried out based on the coordinate points in the Autocad application by connecting the coordinate points.

Figure 4. Mapping Implementation

c. Landscape Planning

The next stage is planning the landscape arrangement. The planning of the landscape arrangement of the Cacalan Beach area is divided into several stages, namely:

1) Description of the existing landscape

Based on the results of the detailed mapping of the situation, then a description of the landscape of the existing condition in the Cacalan Coastal Area is carried out. This landscape depiction aims to determine the current layout of the Cacalan Beach Tourism Area. Furthermore, evaluation and planning are carried out to optimize the arrangement in the area.

2) 2D landscape planning

After evaluating the existing landscape for further 2D landscape planning. This landscape planning aims to optimize the layout which will later be used as a reference for the future development of the Cacalan Beach area. Landscape planning uses the concept of natural building, this is because in order to become a tourist icon in Banyuwangi. In addition, the concept of the natural building also supports sustainable development so as not to damage the scenery and the environment in the area. The concept of natural building is also in line with the policy direction of the Banyuwangi Regional Government so that development on Cacalan Beach is semi-permanent.

There are several arrangements made in this landscape planning, namely in the swamp area 1 bridge was added,

then the addition and arrangement of triangular houses, the addition and arrangement of additional areas, namely camping ground, arrangement of UMK kiosks, and landmark and parking areas.
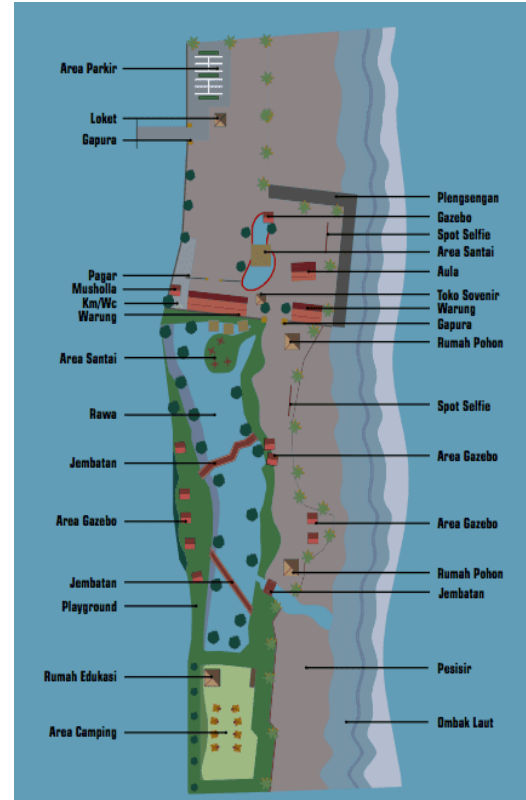

Figure 5. 2D Setting Landscape

3) Discussion and review from Pokdarwis

Next, a discussion was held with the Cacalan Beach Pokdarwis to get input related to the landscape plan that had been made. The input was carried out through deliberation conducted between Pokdarwis members and conveyed several picture items that needed to be added and improved, especially the photo spots and entrances made of bamboo.

4) 3D landscape creation

After the 2D dimensional landscape arrangement is approved, the next step is to create a 3D landscape using the SketchUp application. This aims to get a more realistic picture of the arrangement of the area. In addition, the 3D landscape can be used as a benchmark for making 3D mockups.

Figure 6. 3D Structuring Landscape

d. 3D Mockup Making

The making of 3D mockups is done after the 2D and 3D drawings are completed. The mock-up is made by referring to the landscape planning drawings that have been made. The 3D mockup aims to be able to provide a small picture of the landscape of the Cacalan Beach area. From the 3D mockups that have been made, it is hoped that it will facilitate Pokdarwis in developing the area in the future.


Figure 7. 3D Mockup

e. 3D Mockup and Drawing Document Submission

The final stage of the service carried out was the submission of 2D and 3D drawing documents and 3D mockups of landscape arrangements to the Cacalan Beach Pokdarwis. Pokdarwis really appreciates the product images and mockups that have been made and in the future, the development of the Cacalan Beach area will refer to the landscape arrangement that has been made.


Figure 8. Submission of Drawings and Mockups

## 5. Conclusion

Structuring the landscape of the Cacalan Beach area can increase the utilization of tourist space on Cacalan Beach. The concept of natural building development can become an icon of Cacalan Beach so that it can increase tourist visits. The results of the arrangements of the Cacalan Beach tourist area in the form of 2D and 3D images accompanied by 3D mockups that have been made can be used as a reference for the development of the area. So that in the future, the development of regional arrangement can focus according to what has been planned and in accordance with the agreed concept.

## 6. References

[1] Beljai, Matheus.(2014). Konsep Penataan Lanskap untuk Wisata Alam di Kawasan Taman Wisata Alam Sorong, *Manusia dan Lingkungan,* 21(3), 356-365. https://doi.org/10.22146/jml.18564.

[2] Putri, Ulimaz Joko.(2019). Strategi Pengembangan Objek Wisata Pantai Cacalan di Desa Klatak (Skripsi, Universitas Brawijaya, 2019). Diakses dari http://repository.ub.ac.id/170553/.

[3] Siahaan, Fanny.(2014). *Natural Building Techniques* (Teknik Bangunan Alami) pada Bangunan Sederhana sebagai Langkah Mewujudkan *Green Building, SCALE* ISSN: 2338-7912, 2(2), 60-71.