

THE IDENTIFICATION OF THE UNTUNG JAWA ISLAND'S INFRASTRUCTURE, LOCAL POTENTIALS AND ECOLOGICAL ASPECT FOR THE DEVELOPMENT OF AN ECOLOGICAL BASED INFRASTRUCTURE

Sarjono Puro

Program Studi Teknik Sipil Universitas Bung Karno
Jakarta, Indonesia
e-mail : purosarjono@gmail.com

Niken Atmiwyastuti

Program Studi Teknik Sipil Universitas Bung Karno
Jakarta, Indonesia
e-mail : sofieniken@yahoo.co.id

Nina Restina

Program Studi Teknik Sipil Universitas Bung Karno
Jakarta, Indonesia
e-mail : nina_rest@yahoo.com

Abstract

Geographically, the Untung Jawa island is located at the Seribu Islands region, a maritime tourism spot at the north of Jakarta. The development of new infrastructures in the island would benefit to not only for tourism, but also the activities environmental sustainability in the area. A sustainable tourism development must touch three important aspects: *First*, economic, social and environment which are inter-related to each other. If not carried out in a balanced way, then it could possibly damage the infrastructures around the tourism area, such as breakwaters, piers and the whole environment. In conclusion, it is important to map the characteristics of the infrastructure damage around the Untung Jawa Island, as well as the urgency to update the information about the ecology of the islands without forgetting the government's role to develop the island by considering the characteristics of the infrastructure, local and ecological potential.

Keywords: potential tourism, nature conservation, characteristics infrastructure, ecological island

Abstrak

Pulau Untung Jawa adalah bagian dari Kepulauan Seribu dan merupakan suatu kawasan wisata bahari yang menjadi salah satu daya tarik pariwisata Daerah Khusus Ibukota Jakarta. Potensi keindahan biota laut dapat dikembangkan melalui pengembangan sarana dan prasarana atau infrastruktur sebagai penunjang kegiatan pariwisata agar kelestarian alam tetap terjaga. Pengembangan pariwisata berkelanjutan memerlukan 3 aspek yaitu ekonomi, sosial dan lingkungan yang satu sama lain saling berkaitan. Berbagai dampak dari pengelolaan wisata antara lain kerusakan infrastruktur antara lain, kerusakan pantai, pemecah ombak, dermaga serta kerusakan lingkungan sehingga perlu pemetaan karakteristik kerusakan infrastruktur, informasi tentang ekologi kepulauan serta keterlibatan pemerintah dalam rangka pengelolaan Kepulauan Seribu dengan memperhatikan karakteristik infrastruktur, potensi lokal dan ekologi pulau.

Kata kunci: potensi wisata, kelestarian alam, karakteristik infrastruktur, ekologi pulau

Preliminary

The Seribu Island is a famous marine tourism spot located north of Jakarta. Despite the popularity, it only gave little benefit for local residents as well as the government through the income tax. The unique characteristic of the island should be maintained to preserve the environment for tourism purposes, to increase the number of tourists staying at the Seribu Island. The map of the Seribu Islands could be seen in Figure 1.1a and the layout of the Untung Jawa Island in Figure 1.1b.

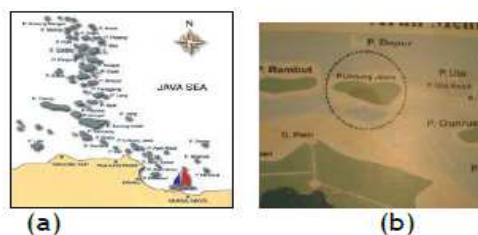


Figure 1.1(a) Kepulauan Seribu
(b) Untung Jawa Island

Eco tourism which promotes environmental values should be promoted in the Untung Jawa Island. On the contrary, as a result of increasing demand for tourist facilities, physical developments in the area have been intensely carried out. This condition could lead the environmental surroundings in the Untung Jawa Island to be deteriorated. In short, it is necessary to develop a planning and design blueprint for the tourism activities in area which are based on the preservation of the environment. In the present time, the tourism development is far from the target, while other island in the Seribu Island region, such as the Pramuka Island, seemed to be standing behind in terms of utilizing the existing facilities and infrastructure.

The potential beauty of marine life can be developed through the development of infrastructure or infrastructure to support the preservation of nature tourism activities in order to stay awake. Through wisdom a lot of natural potential that exists around the Thousand Islands that can be utilized for infrastructure development while maintaining environmental sustainability.

Overview of the Untung Jawa Island

a. Location

The Untung Jawa Island is a part of the Seribu Islands located in the north of Jakarta, the capitol of the Republic of Indonesia.

b. History

The Untung Jawa Island (Kherkhof Amsterdam) has been inhabited since the 1930's when a group of villagers led by Bek Marah, one of the first village chief, migrated from another island that had been hit by a heavy abrasion. However, many years later, these people under the new chief, Bek Saenan, had to migrate to another island, the Ubi Besar Island, around 1940 due to mosquito attack on the island that had created massive suffering to the people of the Untung Jawa Island. Finally, they returned to stay on the Untung Jawa Island in 1954 until now as marked by a monument shown in Figure 1.2.



Figure 1.2 The monument of the returning of the Ubi Island's inhabitants to the Untung Jawa Island

c. Settlements and Tourism

The Untung Jawa Island is actually a *Kelurahan* or a village of the Seribu Island district, the administrative regency of the Seribu Island. The island is small in size (40,10 hectares) and has a population of 1,888 people. It has beautiful beaches and surrounded by mangrove forest.

Economic empowerment in managing both the human and natural resources in the island could redistribute the tourism income, between the regency and the people who run the tourism service. Housing conditions and infrastructures in the Untung Jawa Island can be seen in Figure 1.3.



Figure 1.3 Existing facilities in the Untung Jawa Island

In addition, the houses in the island are not only designated for settlements purposes, but also for tourism purposes (providing bed & breakfast, motel). From the results of their travel megelola earn to make ends meet. Settlement conditions can be seen in Figure 1.4.



Figure 1.4 The settlement conditions in the Untung Jawa Island

Natural richness of the Untung Jawa Island can be seen in Figure 1.5.



Figure 1.5 The Tourism potentials of the Untung Jawa Island

The Island is facilitated by piers to support the sea access from and to the ports of Jakarta and Tangerang. This facility, which is the best of all piers in the Seribu Island area, plays an important part in creating increasing the growth of tourism activities in the area. The pier facilities can be seen in Figure 1.6.



Figure 1.6 The pier facilities on the Untung Jawa Island

Problems

a. **The decreasing level of environmental condition**

There are three interrelated factors that need to be considered in developing a sustainable tourism, namely economic, social and the environment¹. On the contrary, several infrastructures in the island have been damaged, such as its beaches, breakwaters and piers. Most of the dikes have been exposed to corrosion due to the contact with the waves. Less preservation of existing infrastructure that threatens the existence of the Thousand Islands. These conditions can be seen in Figure 1.7.



Figure 1.7 The condition of infrastructure on the Untung Jawa Island

b. **The low maintenance of the public facilities**

In general, existing public facilities on the Seribu Island is sufficient but there are some facilities which need more improvement in order to support the daily life of the locals and the tourists. This condition can be seen in Figure 1.8.



Figure 1.8 Public facilities are not maintained

c. **Ecological characteristics of the islands.**

To control the ecological condition on the Untung Jawa Island, a comprehensive data collection about the flora and fauna on the island is really important. Thus it would help to build a planning for the development of tourism in the area. Moreover without the data, the effort in developing the the tourism in the area could be difficult. In the present time, there is no document that provides any information of local materials that could be used in the development of infrastructures on the island.

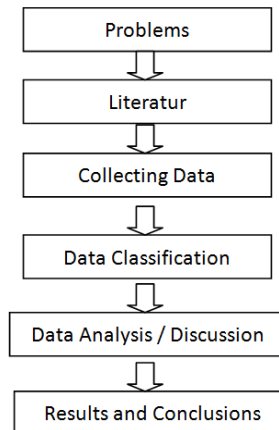
Objectives and Benefits of the research

The purpose of this study is:

- a. To study the characteristics of the Seribu Island's ecology;
- b. To try to map the damage on the infrastructures and providing adequate advice for the improvement of the condition of the infrastructures regarding to the development of tourism in the Seribu island.

Research Methods and Analysis

The research methods are presented in the flow chart below:



Literature

1. **About The Seribu Island**

Indonesia has many spots that provide maritime and coastal tourism activities. One of them, The Seribu Island, has been declared as a marine national park under the Decree of the Minister of Forestry No. 162/Kpts-II/1995 and 6310/Kpts-II/2002 controlled by the agency of the Seribu Islands National Marine Park, Department of Forestry of the Republic of Indonesia. It has an area of 107,489 hectares with approximately 44 islands.

2. **The Principles of Environmental Conservation**

In carrying out the efforts on integrating environmental sustainability and tourism, the role of government is very important through its policies concerning these principles:

- a. **Conservation** must be able to protect, maintain, and improve the quality and sustainability of the natural resources⁴.
- b. **Education**: should contain the elements of education to change the people's behavior and attitudes by campaigning the values of responsibility and commitment to the improvement of the environment.
- c. **Economy**: must be able to provide economic benefits to the public and preparing them to be the economic driving force to balance the development of the island.
- d. **Public participation**: community support is needed so that they are willing to participate in the development of the area.
- e. **Recreation**: the recreational activities and facilities must be able to give a certain standard of service for the tourist.

3. **Public participation in the environmental conservation**

In the sustainable development paradigm, the local residents are the subject of development. It emphasizes on the participation of the local people's contribution to the development. The argument is based on the assumption that

people who knows more about their environment would gain more benefits than those who know less. The people are encouraged to :

- a. Build Environmental Awareness in the community
- b. Building a maritime community that maintains their cultural and religious values.

4. The islands' Infrastructure Development

According to the Ministry of Settlement and Regional Infrastructure (2002), there are two types of infrastructure: economic and social infrastructure. Economic infrastructure is a physical infrastructure, which are used in the production proses and are utilized by the public, such as urban drainage, water supply and sanitation, irrigation, telecommunications, transportation. Meanwhile, social infrastructure are related more to the building of a health and education infrastructures.

Discussion

1. Settlement and Tourism in the Untung Jawa Island

Through the villages of the Untung Jawa Island, the visitors should be able to see the unique building architectures that could be the source of attraction for the tourists. On the contrary, if a place does not have any uniqueness at all, then it would be impossible to create the place as a tourist object. The tourist service providers should be able to preserve the distinctiveness, (such as the stage houses) so that it would give the natural impression to the tourists who stay on the island.

2. Water facilities and Waste Management

The provisions of facilities is substantial for sustaining both daily life or for tourist purposes. The infrastructures that support the community activities can be seen in Figure 2 1, 2.2, 2.3.

The Untung Jawa Island has a good example of drainage and waste management system.



Figure 2.1 System WMI (Water Management Installation)

Moreover, the island also has a garbage processing system from collecting, transporting and processing in fact, the people of Untung Jawa Island has their traditional way of managing waste: they get rid of their household waste by burying it in their yard. In addition, incinerators provided by the government have also increase the performance of the waste management in the island².



Figure 2. 2 The waste management system on the Untung Jawa Island

1. The infrastructure on the Untung Jawa Island

a. Drainage

To control the sewers that carries water waste from the houses, the island has a control tub. It could help to remove wastes that obstructs the flow of the water to the sea. The condition can be seen in Figure 2.3.



Figure 2. 3 the Drainage control utilities on the Untung Jawa Island

b. Road

The Untung Jawa Island has a decent road access. Most of them uses paving blocks that would easily absorb water as another example of the island's drainage system. In addition, the use of paving blocks could be effeciently maintained and repaired that shows the sustainability of the infrastructures.



Figure 2.4 The condition of the streets on the Untung Jawa Island

c. Pier Structure

The piers on the island really supports the mobility from and to the Untung Jawa Island. They are susceptible to damage caused by waves, corrosion by sea water, the low quality of materials, the structural strength and others. In order to keep the the piers in a good condition, they should be inspected regularly.



Figure 2.5 The structure of piers on the Untung Jawa Island

d. Breakwater

The breakwater is another important infrastructure required by the Untung Jawa Island. It could reduce the amount of strong movement of waves before entering the mainland. The structure of the breakwater must be made of corrosion-resistant material so that it could hold the movement of sea water.



Figure 4.5 The condition of the breakwater structures in the Untung Jawa Island

4. Mangrove

Typical mangrove area can be developed on the island of Java Profit. The existence of mangroves that cover part of the coast must be maintained properly. Visitors will feel comfortable and interested in exotic mangrove forests. The visitors can be invited to tour through the bridge that has been built to enjoy the uniqueness of mangrove plants. Surround the mangrove forest conservation through the streets winding walkways, on either side of many mangroves are being bred. Occasionally there are also items that occupied people for selling food & drink. With Lucky charm owned island of Java, really make anyone feel lucky've been to this island. Should be a lesson for tourists on this plant for humans and the lives of the Indonesian people.



Figure 4.6 The Mangrove forest around the Untung Jawa Island

5. Government Involvement

To support tourism at the Untung Jawa Island, the local government should provide policies that would enable the growth of both tourism and economic activities. In the long term, they would not only bring wealth to the government and the people, but also support the preservation of the environment on the island. The policies should be made by considering the local uniqueness and potentials for the benefit of the people of the Untung Jawa Island. The involvement of universities or other educational institutions which are concern on the development of the Untung Jawa Island could be needed in order to give external control on the implementation of policies and the condition of the infrastructures in the Untung Jawa Island.

Conclusion

In conclusion, below are some notes related to the study of Untung Jawa Island:

1. The island's natural resources:
 - a. Mangrove forests, beaches, sea.
 - b. These resources could be developed by considering the sustainability and the ecological balance on the island.
2. Its environment:
 - a. Local waste can be handled the local community (burning, pile up).
 - b. Waste shipments must involve or concern of the government of Jakarta.
3. The physical infrastructures on the island:
 - a. The present breakwater structures is not comprehensive (around) the island, thus the system used by the break water structures needed to be modernized
 - b. The piers should be rehabilitated due to the corrosion;
 - c. The structure of the road is environmentally friendly using a natural catchment system
4. Economic condition
70% of the local people living on the island are fishermen, traders and civil servant;
5. Housing
Most of the people build their house for homestay to the tourists (especially, those who are located near overlooking the pier.

Suggestions:

1. There should be a mapping and inspection on the condition of the infrastructures at regular intervals
2. There should be a study of the breakwater retrofitting
3. The local people on the Untung Jawa Island need to be empowered
4. Both the local cultures and knowledge shared by the Untung Jawa Island should be maintained (their unique stage house architectures, their own way of doing waste management, and so on)

Reference

1. Shima, 2009. The International Journal of Research into Island Cultures Vol 3 No 1
2. Firman L. Sahwan, 2004. Strategi Pengelolaan sampah di kawasan Kepulauan Seribu, Jurnal Tek.Ling P3TL-BPPT
3. H. Kusharjanto, D. Kim. 2011. Journal of the Asia Pacific Economy. Vol. 16, No. 1, February
4. Elizabeth H and Amy L. McCleary, 2011. Nature's Eden? The Production and Effects of 'Pristine' Nature in the Galápagos Islands, Island Studies Journal, Vol. 6, No. 2