

APPLICATION OF INFORMATION TECHNOLOGY FOR PROMOTION AND SUSTAINABLE MANAGEMENT IN MARINE ECOTOURISM: A CASE STUDY IN BANGSRING, BANYUWANGI

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ABSTRACT

Ecotourism is a form of tourism management by promoting the unique tourist attraction such as natural destination, conservation, education and local wisdom. Banyuwangi is a region that makes ecotourism as an important pillar of the economy in coastal areas. Communities in the coastal village of Bangsring District, Banyuwangi, generally have a chance to earn more revenue from ecotourism sector. The existence of coral reefs and beautiful islands are natural potential that can be developed into high-value marine ecotourism, especially with the increase in ecotourism trend. It is also in line with the direction of Government policy in Banyuwangi to advance marine ecotourism sector. Based on information obtained from the chairman of Pokwasmas Samudera Bhakti and KNIH Bangsring, the problem faced by partners related to the development of ecotourism was that Bangsring ecotourism requires more promotions. Information about ecotourism so far has not fully use information technology, whereas characteristics of ecotourism fans who belong to a niche market requires their websites and other social media as an effective media campaign. "Bunder" (Underwater Bangsring) is one of the marketing strategies and promotion of village tourism potential in Bangsring using mobile application based on android. By using information technology (IT), "Bunder" is able to generate informations based on android

platform that can be accesed from anywhere and by everyone. A downloadable application named "Bunder" is regarding the potential of tourism and natural resources in Bangsring and its surrounding. This application is expected to support effective promotion towards sustainable management of marine ecotourism in Bangsring, Banyuwangi.

Keywords: information technology, Bangsring, ecotourism.

INTRODUCTION

Banyuwangi Regency has an area of 5782.50 km² (578.250 ha) and long coastline of about 175.8 km. With the long coastline, Banyuwangi has various intensification and diversification of coastal area management and marine waters for the future development of marine resources (Pemerintah Kabupaten Banyuwangi, 2016). The number of small islands in Banyuwangi are 17 islands (BPS Kabupaten Banyuwangi, 2015). The coastal area Banyuwangi according to Law Number. 27 year 2007 spread over 11 districts, which covers: District of Wongsorejo, Kalipuro, Banyuwangi, Kabat, Rogojampi, Muncar, Tegaldlimo, Purwoharjo, Bongorejo, Siliragung and Pasanggaran. Banyuwangi has many potential coastal areas for tourism, fisheries and aquaculture, mining, farming, industry, forestry, agriculture, plantations and settlements. But the most prominent activities are fishing, industry and tourism.

Some activities are mostly oriented on the sea and become the main income for some people who live in that area. Referring to the concept of Coastal Resilience (McLeod and Salm, 2006), the coastal communities is expected to have the capacity of good life, able to utilize the natural resources sustainably, both to meet the needs of daily life as well as for natural resources. Marine ecotourism activity is also an implementation of coastal resilience program.

Subdistrict Wongsorejo is located on the east side of Banyuwangi and directly adjacent to Bali Strait. The potential tourist destination in Wongsorejo located in Kampe Beach and Tabuhan Island. Kampe Beach is located in Bangsring Village, Wongsorejo. It has a beautiful panoramic view of the Straits of Bali, and not so far from this beach there is Tabuhan Island which also has a beautiful scenery. Another tourist destination, Tabuhan Island Marine Park, is located in the waters of the Bali Strait with an area of 5.5 ha. It is a beautiful sandy beach surrounded by coral reefs and ornamental fish.

Banyuwangi is a region that drives its economic activity as an important pillar of sustainable ecotourism in coastal areas, so it could be made as a pilot project area of sustainable ecotourism destination that developed and managed based on local resources. Bangsring and its surrounding area is a potential coastal ecotourism destination managed by a public watchdog group named Pokwasmas "Samudera Bhakti" together with a group of fishermen named "Kelompok Nelayan Ikan Hias (KNIH)". They have a noble purpose to develop Bangsring ecotourism using information technology for promotion and marketing strategy. Regarding to the potential of tourism and biological resources in Bangsring and its surrounding area, the mobile application based on android is one of the best solution for promotion media for

Bangsring ecotourism. That application is expected to be an effective promotional supporting activities in managing the marine ecotourism in Bangsring, Banyuwangi.

MATERIALS AND METHODS

The communities in Bangsring together with Pokwasmas Samudera Bhakti and KNIH had 2 (two) main implementation of science and technology in their promotional activities. These activities include: 1) an inventory of activities and ecotourism potential of the coastal village of Bangsring; and 2) Preparation of information systems in the form of mobile applications named "Bangsring". The potential inventory activities began in June 2015, followed by the making of this application in August 2015. Those activities could be explained in the detail as follows:

1) Inventory Data of ecotourism in Bangsring.

High potential for ecotourism has not been matched by its management system. Later, the data inventory of ecotourism activities in Bangsring was made. The expected content included data and information about a wide variety of travel, culture and diversity of the potential. The results of this inventory will be used as well as the input data on Bangsring's travel information portal.

2) Creating information portal of coastal ecotourism area in Wongsorejo

The existence of web-based information portal and downloadable applications at the moment is an important key in the promotion and management of the area. In this information system will be displayed (a) geophysical profiles and regional administration (b) the local potential of biological resources (c) the ecotourism potential and (d) other information related to the activities in Wongsorejo coastal areas.

The application launched in November 2015. At the time, it already included the data and information about existing tourism potential in Bangsring. But the entered data was still a preliminary data which expected will be updated later on by Pokmaswas Samudera Bakti and KNIH. The ability of local resources in managing information systems were expected to become a role model of coastal management in achieving equalization technology.

RESULTS AND DISCUSSIONS

The results were the implementation of 2 (two) activities included: 1) an inventory of activities and potential ecotourism of the coastal village in Bangsring; and 2) making

the application of information systems formed in mobile applications named "Bangsring Underwater". The aim was to facilitate the tourists to easily get complete information about ecotourism in Bangsring. On the other hand, related to the improvement of environmental sustainability score, then made the "rules" which contained restrictions on visits to each attraction. The event began with the preparation of mobile application content.

Inventory Data of Potential Ecotourism in Bangsring Coastal Zone and its surrounding area

The inventory data of potential coastal and ecotourism in Wongsorejo coastal areas, obtained as follows (Table 1):

Table 1. List of eco-tourism attraction in Bangsring

No	Attraction	Features	Opening Hour	Place	Fare
1	Snorkling, Diving	Nature	Working hours (Max. 5 hours)	Tabuhan Island	<ul style="list-style-type: none"> • Equipment + Rp. 450.000,-/ship • 1 ship for 10 person
2	Camping, Tracking	Nature	Working hours	Tabuhan Island	<ul style="list-style-type: none"> • Rp. 450.000,-/ship • 1 ship for 10 person
3	Night Spearfishing	Nature	Sesuai Pesanan	Tabuhan Island	<ul style="list-style-type: none"> • Rp. 450.000,-/ship • 1 ship for 10 person
4	<i>Mola mola</i> watching	Biota	Working hours	Tabuhan Island	<ul style="list-style-type: none"> • Equipment + Rp. 450.000/ship • 1 ship for 10 person
5	Snorkling	Nature	Working hours	Bangsring	<ul style="list-style-type: none"> • Rp. 25.000,- / 1 set equipment • Guide Rp. 30.000,- • Underwater camera Rp. 150.000,-
6	Diving	Nature	Working hours	Bangsring	<ul style="list-style-type: none"> • Rp. 800.000,- / 1 set equipment + guide
7	Manta Tow	Nature	Working hours	Bangsring	<ul style="list-style-type: none"> • Rp. 10.000,-
8	Fish Apartement	Biota	Working hours	Bangsring	<ul style="list-style-type: none"> • Rp. 25.000,- / 1 set equipment • Guide Rp. 30.000,- • Underwater camera Rp. 150.000,-
9	A place for seminars and traditional dance	Budaya	Sesuai Pesanan	Bangsring	<ul style="list-style-type: none"> • Rp. 5.000.000,- / 35 person • Rp. 35.000,- for 1 additional person
10	Reef Transplantation	Educatio n	Working hours	Bangsring	Donation for conservation
11	Snorkling, Diving	Nature	Working hours (Max. 5 hours)	Menjangan Island	Rp. 1.450.000,- / ship
12	Swim with sharks	Biota	Working hours	Floating house	<ul style="list-style-type: none"> • Rp. 5.000,- • 1 ship for 5 person
13	Fun with fish	Biota	Working hours	Floating house	<ul style="list-style-type: none"> • Rp. 5.000,- • 1 ship for 5 person
14	Bangsring Library	Educatio n	Working hours	Bangsring	Free
15	Canoeing	Outdoor	Working hours (Max. 2 hours)	Bangsring	<ul style="list-style-type: none"> • Rp. 30.000,- • 1 canoe for 1 person

Remarks: Rate and data for 2015

Development management and evaluation of ecotourism activities in Bangsring

Bangsring village located in district Wongsorejo, along the Bali Strait, had a unique feature of the coral reefs and also Tabuhan Island, with easy access from the highway. This condition had a great potential for ecotourism. Especially completed with the existence of Community Supervisors (Pokmaswas) KNIH and Samudera Bhakti, who committed to maintain fisheries assets such as coral reefs and reef fish through conservation activities in the form of common protection zone named Zona Perlindungan Bersama (ZPB). Before became ZPB, previously most local fishermen doing destructive fishing activities such as bombings and taking coral

reef and reef fish using destructive device. Those activities caused the coral reefs and fish had been swept away in a short time. Until a local resident named H. Arief Ichwan pioneering coral reef and reef fish conservation that eventually let to the formation of a public watchdog group or Kelompok Pengawas Masyarakat named Samudera Bhakti which was then shortened to be Pokwasmas Samudera Bhakti. This group initiated several conservation and monitoring activities, so that ultimately formed agreed ZPB and had clear boundaries to be managed as a conservation area. The protection zone which also known as Bangsring Conservation Area, covered the "Bunder" ecotourism area and the core zone (Figure 5).

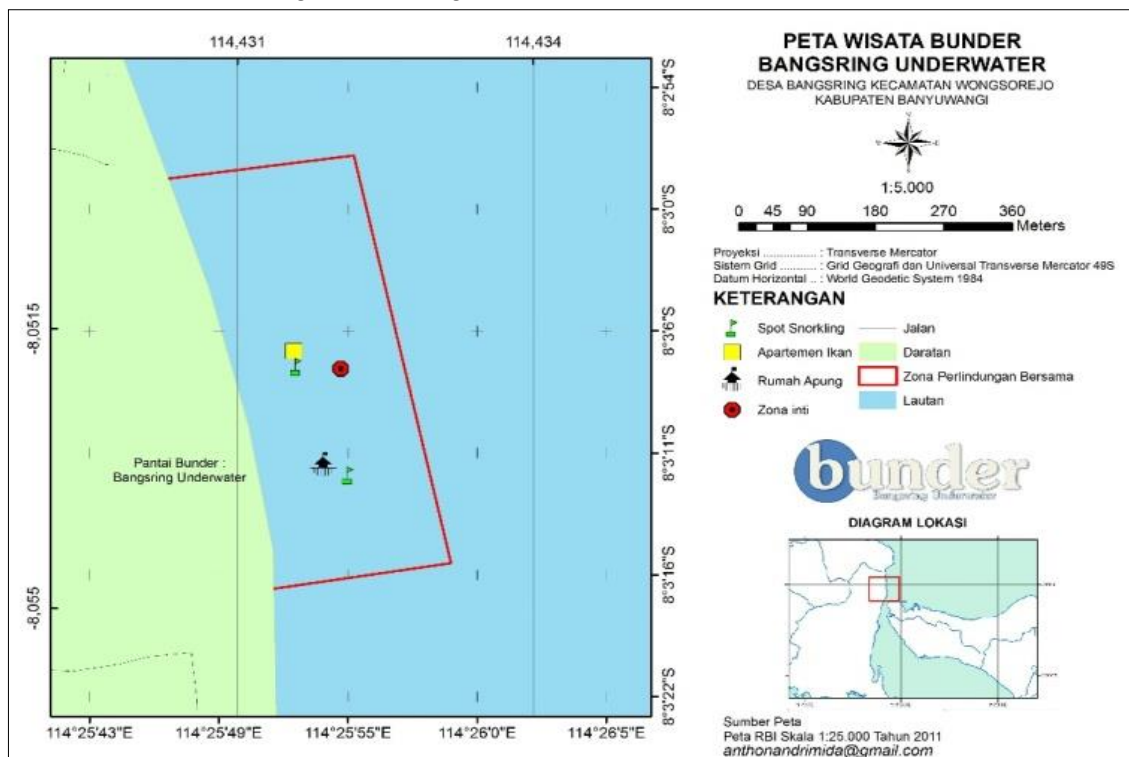


Figure 5. Zoning Map Bangsring Conservation Area, covered the "Bunder" ecotourism area and the core zone

The launching of the Conservation Area Zoning (ZPB) Bangsring as a location for ecotourism began in 2013 within a beautiful panoramic view of the beach as the main attraction. Then followed with the development of local attractions in the area such as snorkeling, trekking and diving on

the Tabuhan Island. It was expected in the next year, Bangsring area could be more well known and more tourists. Some promotional activities such as in 2015, there was an additional attraction in the form of floating house provided by the Ministry of Maritime and Fisheries Affairs. While in the

same year, ecotourism in Bangsring ZPB officially managed by naming as "Bunder" (Bangsring Underwater). Whereas it was also still a long time and a tireless efforts for the local community to reduce destructive fishing activities which then led to the formation of co-operative with the surrounding community to support ecotourism activities in the ZPB area.

The increasing number of tourists coming to Bangsring also became a challenge for the management, especially considering this area is a conservation area. A serious commitment must be kept in the direction of ecotourism development with gave an attention to conservation.

Mobile Application "Bunder" Bangsring Underwater based on Android

Bangsring Underwater (Bunder) mobile application based on android could be downloaded for free from Google play store. Some instructions and steps to obtain and install this application were as followed:

1. Bunder (Bangsring Underwater) Mobile Application can be downloaded for free via the "Play Store" on android. Open Google play store, then type "Bangsring". Then the page will appear as in Figure 6.

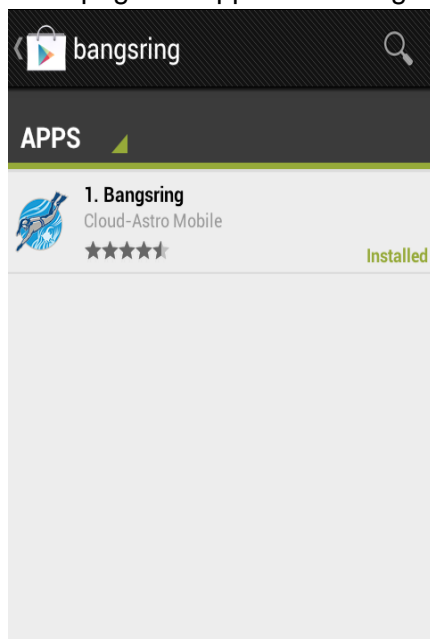


Figure 6. "Bunder/Bangsring" Mobile Application on Google Play Store

2. After the display appears as Figure 6, click "Bangsring", and the application could be downloaded for free (Figure 7).

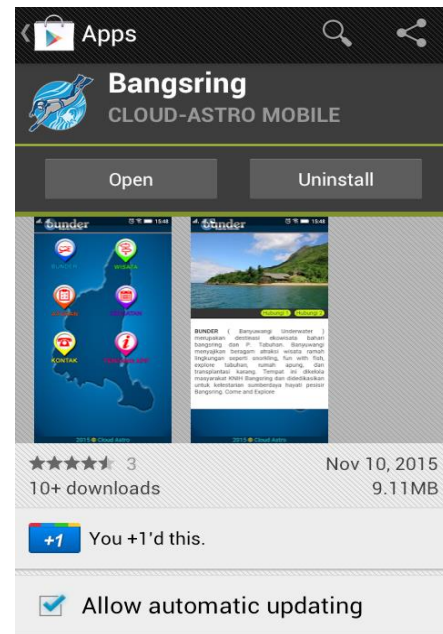


Figure 7. Free download for mobile application "Bunder" Bangsring Underwater on Google Play Store

3. After the application "Bangsring/Bunder" perfectly downloaded, the application is ready to install. Bangsring application display as in Figure 8.



Figure 8. Bunder page view after the application is installed

Mobile Application "Bunder" Screenshot Display

Some screenshots of the application shown the results Mobile "Bunder" that had been made as in Figure 9 and Figure 10.



Figure 9. Front page of the mobile application "Bunder"

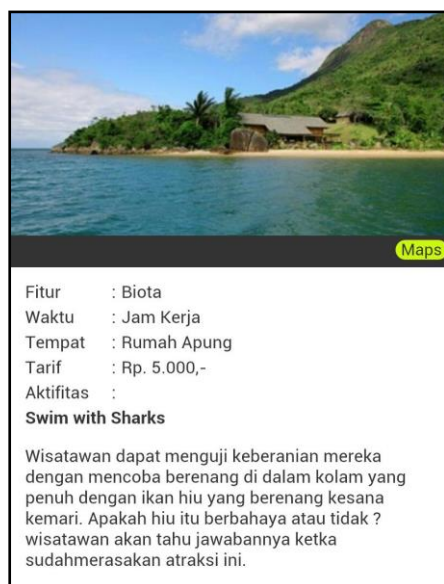


Figure 10. Screenshot of page views links in mobile application "Bunder"

Mobile application "Bunder" Underwater Bangsring based on android was expected to increase tourism promotion and other potential in Wongsorejo coastal area, included the tourism potential in Bangsring village, Floating House, Menjangan Island and Tabuhan

Island. Hopefully, promotion or marketing based on information technology could improve the segmentation and market share, considering android had already widely used by many people. In the future, hopefully android-based application promotion could be accessed by the larger number of people.

CONCLUSION

From the results of the activities that had been carried out, a number of conclusions as followed:

1. Bangsring village located in District of Wongsorejo had a great tourism potential
2. The potential of tourism in Bangsring Village need for increasing promotion and marketing management
3. The mobile application "Bunder" Underwater Bangsring based on android was one of the marketing strategies and promotion of village tourism potential in Bangsring.

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