

Gili Genting Island Ecotourism Assessment Trough Operational Area Analysis of Natural Tourism Attractions

Dyah Rina Syafitri ^{a, 1*}, Rahmad Fajar Maulidyy ^{b, 2}, Nailul Insani ^{a, 3}

^a Geography Department, Social Science Faculty, State University of Malang, Malang, Indonesia

^b Management Department, Economy Faculty, State University of Malang, Malang, Indonesia

¹ dyah.rina.1707226@students.um.ac.id*; ² rahmad.fajar1704136@student.um.id, ³ nailul.insani.fis@um.ac.id.

Informasi artikel	ABSTRAK
<i>Sejarah artikel</i> Diterima : 19 Okt 2020 Revisi : 29 Jan 2021 Dipublikasikan : 31 Mar 2021	Indeks Daya Saing Perjalanan & Pariwisata Indonesia mencapai angka 4,3 dengan peningkatan 2,8% dari tahun 2017, dan mencapai 11,0% di atas skor rata-rata global. Sayangnya Indonesia mendapat peringkat buruk untuk aspek Kelestarian Lingkungan. Untuk itu pariwisata berbasis alam atau Ecotourism dinilai relatif sesuai dengan karakter daerah Indonesia. Ecotourism merupakan suatu sistem pariwisata yang mengutamakan pengalaman wisatawan untuk menikmati fenomena alam secara langsung dan merupakan salah satu sistem pariwisata yang sedang berkembang pesat akhir-akhir ini. Tujuan penelitian ini adalah mengkaji dan mengevaluasi aspek kesesuaian dan potensi wisata alam di Pulau Gili Genting, menggunakan Evaluasi Analisis Wilayah Operasional Instrumen ADODTWA dengan indikator oleh Dirjen PHKA. Hasil evaluasi menunjukkan bahwa Pulau Gili Genting memperoleh nilai rata-rata 591,6 dan termasuk dalam kelas II yang menunjukkan bahwa "Kawasan ini Potensi Sedang untuk Pengembangan Pariwisata". Hasil ini menunjukkan bahwa potensi wisata di kawasan ini cukup layak untuk dikembangkan. Pengembangan potensi tersebut didukung karena nilai daya tarik wisata yang tinggi dan menunjukkan potensi wisata alam yang tinggi. Sosial kemasyarakatan yang relatif kental dengan budaya gotong royong khas masyarakat madura lokal juga dapat menjadi keunikan lain. Daya tarik pengembangan pariwisata karena sistem Ekowisata di masa depan.
Kata kunci: Gili Genting Eco-Tourism ADODTW	ABSTRACT Travel & Tourism Competitiveness Index of Indonesia was scored up to 4.3 with 2.8% improvement from 2017, and reaching 11.0% above the global average score. Unfortunately, Indonesia is poorly rated for Environmental Sustainability aspect at 135th place. In addition, nature-based tourism which's relative suitable with Indonesia's regional character, is kind of tourism system that prioritizes the tourist's experience due directly enjoying a natural phenomenon and is one of tourism system that's rapidly increase recently. This research goal was to assess and evaluating the suitability aspects and potential of natural tourism in the Gili Genting Island, using the Evaluation of the Operational Area Analysis of Natural Tourism Objects and Attractions Instrumen (ADO-ODTWA in Indonesia) with indicators by Director General of PHKA. The results of this evaluation, shown that Gili Genting Island obtained an average value of 591.6 and including in the second class which indicate that "this area is Moderate Potential for Tourism Development". This result show that tourism potential in this area was quite feasible to develop. The development potential is supported due the high value of tourist attraction which shows the high potential of natural tourism. In addition, the social local community which is relatively thick with the culture of mutual cooperation typical of the local Madurese also can be another unique attraction for tourism development due Ecotourism system in the future.
Keywords: Gili Genting Eco-Tourism ADODTW	
Introduction Economic Recovery sector needed in this current Pandemic COVID-19 situation, which affect every single global sector since early	January 2020 (Buck et al. 2020; Holshue et al. 2020; Knieps 2020; Nicola et al. 2020; Oyedotun 2020; Peng et al. 2020; Rediff 2020; Sohrabi et al. 2020). In this case, Tourism was the most affected

sector while the most potential sector to recover economic condition on Indonesia in the future-recovery-phase. Based on the 2019 Travel & Tourism Competitiveness Index released by the World Economic Forum research, Indonesia is one of the top 40 countries out of 140 recorded countries (WEF 2019). Indonesia have index score up to 4.3 with 2.8% improvement from 2017, and reaching 11.0% above the global average score. Based on the aspects assessed in the tourism competition index system, Indonesia is ranked 4th in aspects of tourism policy and procurement (Travel & Tourism Policy and Enabling Conditions). Beside Indonesia also ranked 18th in aspect of Natural and Cultural Resources. Unfortunately, Indonesia is poorly rated for Environmental Sustainability aspect at 135th place. This prove that the high level of Indonesia's competitiveness tourism index is has not been followed by an appropriate system to support environmental sustainability. This is a fact that Indonesia needs to develop a tourism system that's supported by the existence of resources by minimizing the environmental impact.

In addition, nature-based tourism which's relative suitable with Indonesia's regional character, is kind of tourism system that prioritizes the tourist's experience due directly enjoying a natural phenomenon and is one of tourism system that's rapidly increase recently (Buckley 2000; Kuo 2002; Pam Wight and Associates 2001; Ryan, Hughes, and Chirgwin 2000). Ecotourism as a sector with nature-based tourism system, is one of the choices that are considered efficient for optimizing tourism services in regional scale depend on various types and interpretations (Donohoe and Needham 2006).

This tourism sector is a complete package of recreation to natural trip attractions, with kind of management was involving the direct local community role and wisdom, emphasizing conservation points and contributing to environmental preservation with sustainable development system, and promoting tourism education, especially in natural aspect (Fennell 2001, 2003; Nugroho 2011; Nugroho, Negara,

and Yuniar 2018). This tourism sector is a mass alternative for sustainable tourism activities that supported by government and tourism stakeholders in general (Hill 2009). This system also maintains balance of sustainable elements that called as "Element of Triple-Bottom-Line-Sustainability" based on the scheme by Hill (2009) as follows figure:

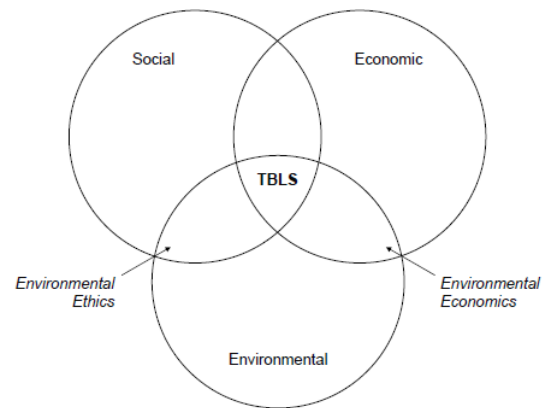


Figure 1. Element of Triple-Bottom-Line-Sustainability

The amount of attention to this kind of tourism system was shown by the abundance of literature, case studies, and various forms of research that are considered to be determinants of the international tourism system from natural resource availability aspect (Pam Wight and Associates 2001; Weaver 2002). Beside the Ecotourism concepts emerged when Ceballos-Lascurain in 1983 coined the term of Ecotourism which was globally interpreted as a correlation between nature-based tourism activities and environmental conservation efforts (Mansour, Al-Awhadi, and Al-Hatrushy 2019). These days, Ecotourism is a shape of motto to help improvement to the quality of life for local communities while preserving the environment (Wearing and Neil 2009).

These various literatures acknowledge that Ecotourism has an important contribution to the national economy development in many countries and plays an important role in encouraging the potential of natural resources and cultural ecosystem services, as well as being a media for promoting sustainable development systems (Nahuelhual et al. 2013; Newsome and

Dowling 2010; Nino et al. 2017; Sharpley 2000). Attracting investment with various productivity programs for local communities while carrying out conservation efforts to protect the environment and biodiversity is one of the advantages of the Ecotourism sector (Coria and Calfucura 2012; Stronza 2007). To effectuate this system, it requires an assessment and evaluation of various spatial variables (landscape, ecological features, geological structures, natural conditions, soil types, and topographic factors) as well as several indicators of suitability (infrastructure, facilities, land form, altitude, land use, land cover and biodiversity) to identify and prioritize potential ecotourism sites (Kumari, Behera, and Tewari 2010; Mansour et al. 2019; Ullah 2013).

Ecotourism with nature-based tourism system being increasingly intensified as an alternative to overcome the problem of overexploitation and natural pollution as well as reduced biodiversity which especially caused by development systems that are not

environmentally sound (Bian et al. 2010; Gu et al. 2013; Hammen and Settele 2019; Li, Du, and Zhang 2020; Liang and Yang 2018; Liu, li, and Pechacek 2013). As an assessment and evaluation of the suitability aspects and potential of natural tourism in the Gili Gending Island, this research was conducted with an instrument of the Evaluation of the Operational Area Analysis of Natural Tourism Objects and Attractions (ADO-ODTWA in Indonesia) using indicators by Director General of PHKA (2003). Through this assessment and evaluation, we try to describe the potential for natural tourism in the Gili Gending Island region for the Ecotourism development to support the concept of sustainable tourism and spur the improvement of the local community's economy. With the implementation of Ecotourism in this area, it is also hoped that it can become a model for regional development that's able to encourage the quality of National Tourism with a sustainable Ecotourism system.

Method

While Indonesia has 16,056 islands, one of them is Gili Gending in Giligending District, Sumenep Regency (UNCSGN, 2017). This research is located in marine resources at Gili

Gending Island (BPS 2019, 2020; BPS 2019), which includes tourism attraction potential and general conditions of this area. Research locations and the distribution of tourism attractions can be seen on the following map:

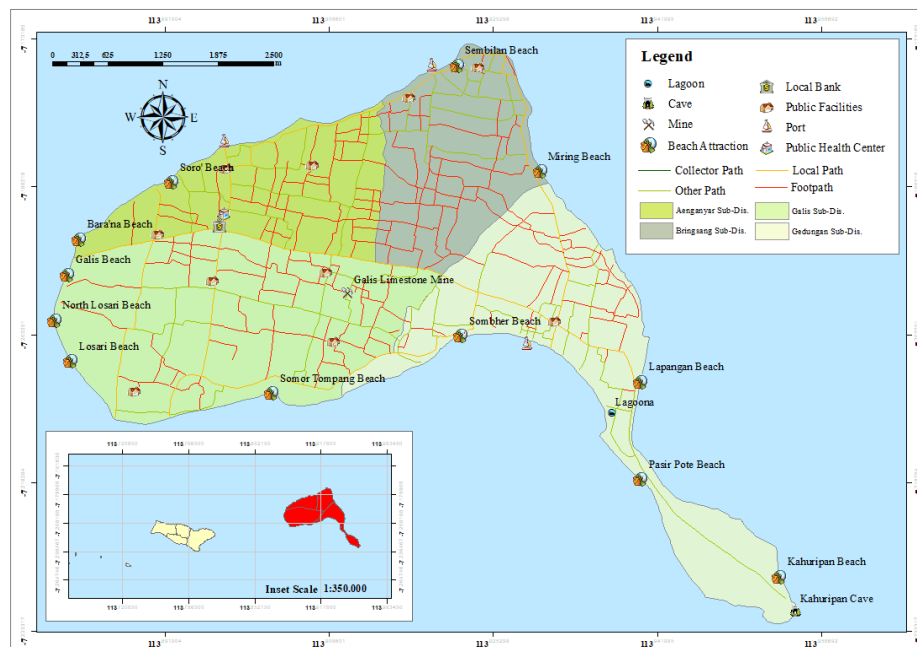


Figure 2. Research location and Attraction Map

The summary research step will be described based on the following diagram:

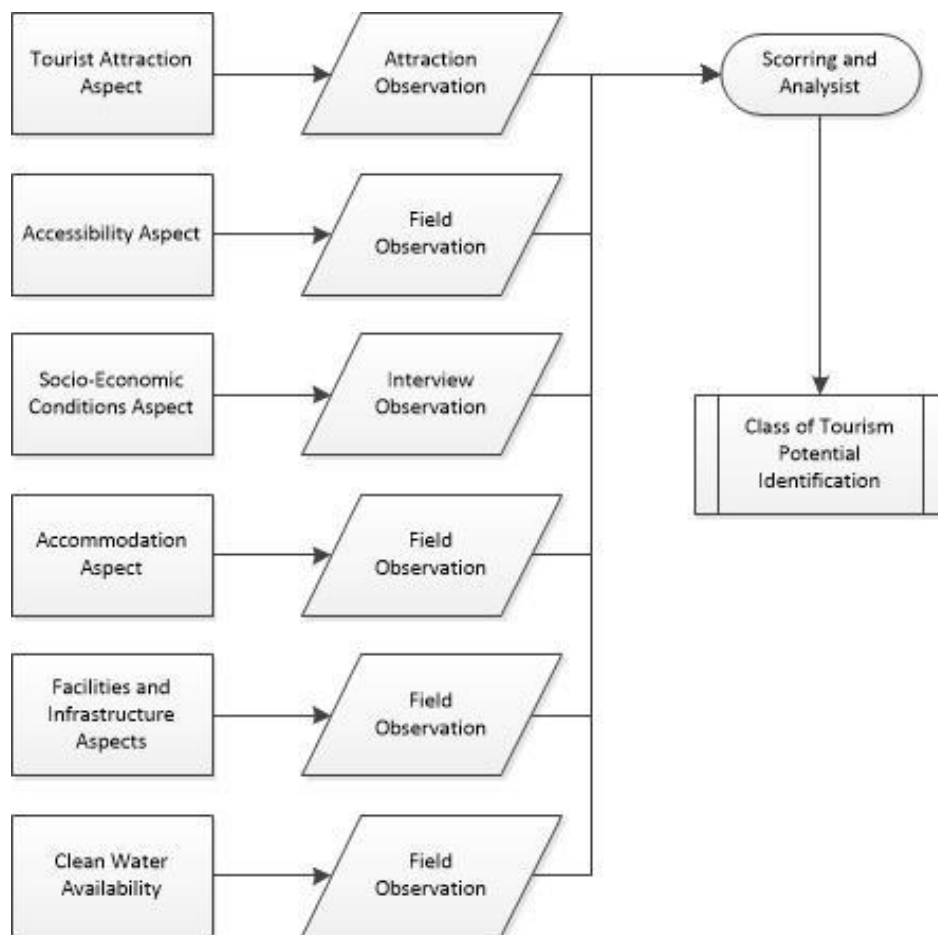


Figure 3. Research and Analysis Step

Attractions that can be visited on Gili Gending Island, which is also including as research location can be seen in this table below:

Table 1. Tourism Attraction in Gili Gending Island

No	Attraction	Type of Tourism
1	Sembilan Beach	Coastal Tourism
2	Soro' Beach	Coastal Tourism
3	Bara'na Beach	Coastal Tourism
4	Galis Beach	Coastal Tourism
5	Losari Beach	Coastal Tourism
6	Sumber Beach	Coastal Tourism
7	Somor Tompong Beach	Coastal Tourism
8	Pasir Putih Beach	Coastal Tourism
9	Kahuripan Beach	Coastal Tourism
10	Lapangan Beach	Coastal Tourism
11	Miring Beach	Coastal Tourism
12	Kahuripan Cace	Geology Tourism
13	Lagoon	Coastal Tourism

Beside, data and resource that will used in this analysis is related to indicator of Operational Area Analysis of Natural Tourism Objects and Attractions (ADO-ODTWA in indonesia) by Director General of PHKA (2003) and display in table bellow: (TABEL AREA ANALISIS)

Table 2. Area Analysis of Natural Tourism Objects and Attractions indicator by PHKA

Indicator	Type of data	Data Reesources
Natural Tourism Objects and Attractions	Primary Data	Observation and attraction mapping
Accessibility	Primary and Secondary data	Regional observation supported by literature review and data from related institution
Social and economy condition	Primary Data	Interview with relevant Subject
Accommodation	Primary Data	Regional observation
Facilities and infrastructure	Primary Data	Regional observation
Clean Water Availability	Primary Data	Regional observation

The objects and attractions that have been assessed are then analyzed according to the Operational Area Analysis of Natural Tourism Objects and Attractions (2003) scoring criteria with values and weight index value that determined for each criteria. The number of values of each criterion can be calculated by equauation $S = N \times B$, while (S) is score of a criteria, (N) is the number of values for each elements base on the criteria, (B) Weight index value which determined.

To classified the result of assessment, we using class in the following table:

Table 3. Operational Area Analysis of Natural Tourism Objects and Attractions Classification

Class	Classification	
	Average Score	Indicator
1	660 – 879	Very Potential for Tourism Development
2	480 – 659	Moderate Potential for Tourism Development
3	281 - 479	Less Potential for Tourism Development

^acontoh catatan kaki tabel

Result and Discussion Tourism Attractions

Through tourism attraction aspect, Gili Genting Island fulfills the natural beauty of coast

aspects with loose views in objects, variations in views each attraction, and views of the object's environment. From 13 tourist attraction in this region, each of them has its own uniqueness which's basically supported by their particular physical character. The lack of buildings in each tourist area provides a loose view of the object. The variety of views in the object is supported by various beach characters ranging from types of sand beaches, coral and even cliff beaches. The natural tourism also supports beautiful natural scenery of the environment. The uniqueness of each resource available in this area includes unique water sources that located on the shoreline (in Sombher beach), caves, particular coastal flora and fauna, also Madurese customs and cultural beauty which are still thick and interesting to learn. Each regional morphological character, Flora and Fauna also Geological and Biological aspect was prominent Resource in this region.

The various activities that may be carried out in the tourism attraction area including 10 types of available criteria, such as: fishing, boating, swimming, picnicking, listening to waves, observing marine life, sunbathing, volley beach, camping and roaming. The location is also free from industrial influences, transportation crowds, and nuisance plants. Regional security is also supported by free disturbance from animals, dangerous sites, theft, fire, and illegal mining. From these aspects, the Operational Area

Analysis of Natural Tourism Objects and Attractions or ADO-DTWA evaluation shows that this area supports comfort, free from annoying odors, free from noisy transportation disturbances, has comfortable air conditions and free from noise and crowds.

This category is assessed as total value 1110 points with weight value are 6 from each existing aspects. This value indicates the high magnitude aspects of the tourist attraction in the Gili Gending Island. The high aspect of attractiveness tourist attraction, especially from the natural attraction is supports the potential for eco-tourism development in this region.

Accessibility

Through the aspect of tourism attraction, Accessibility aspect in this area has supported by main arterial road which connecting Sumenep Regency and Pamekasan Regency, where the route to Tanjung Port as the closest port is easily accessible. This port was is 19 km or 30 minutes by motorbike from district center of Sumenep Regency. In addition, to across the strait we need around 30 minute, so that the travel time to Gili Gending was considered around 1-1.5 hours. Besides, internal roads found in the Gili Gending Island area are relatively varied, such asphalt roads with a width of 3 m, stone or macadam roads, and also dirt roads in several special locations. From accessibility aspect, the internal road type category assessment is determined by the average score of the three kind of road.

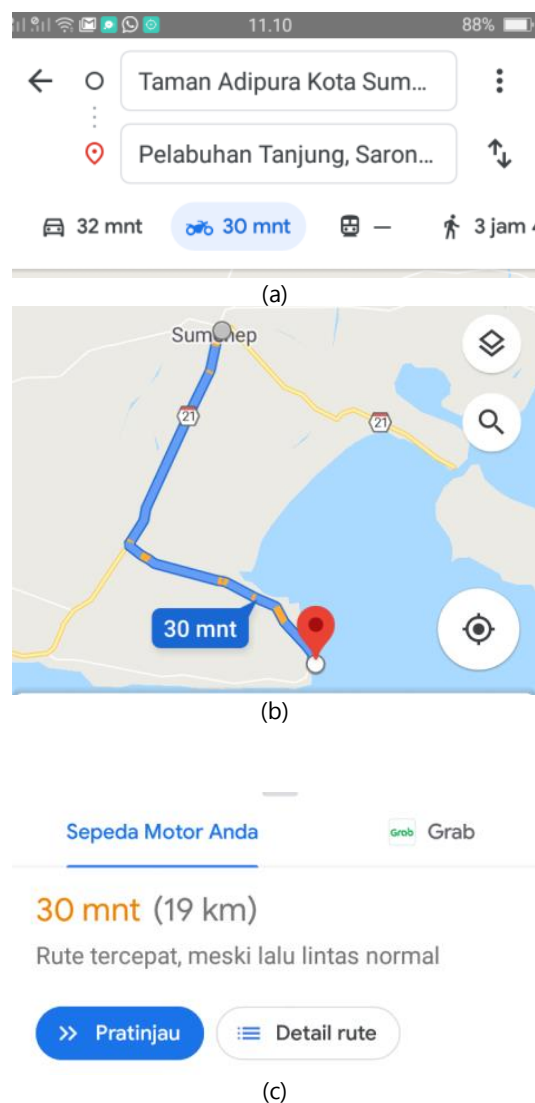


Figure 4. Accessibility to Gili Gending, which (a) was time to travel; (b) was route to travel and (c) was distance to travel (Google Map search engine, accessed on 2020)

Accessibility aspect show evaluation score up to 617 using 5 as the weight value. This score indicates that accessibility to this place and within the each attraction in this island are relative supporting tourism activities. This indication also supports the tourism development concept of better tourism in the future.

Condition of Surrounding Area

The conditions of surrounding area the attraction area in radius 5 km from each attraction location point was obtain with observations and free interviews with local people around. Types of interviewees are generally shop owners or stalls that provide daily necessities or special tourism needs that

determined using purposive random sampling. The variety of livelihood and its relation to tourism activities such as manager and soon, are purposive element in data collection. Interviews result with Sembilan beach manager which the most developed tourist attraction in this region, it was stated that there was no special regional layout especially for tourism development. Beside the regional development was relatively gradual and in accordance with the existence of development capital. The chief of the Sembilan beach manager which also the Head of Bringsang Village government, was explained that this attraction did not receive yet kind of particular assistance from the Regency government and mainly managed by local residents. In other site, the district government stated that the arrangement of regional layout for the Gili Gending Island tourism had been formed and was published in the "Executive Summary Master Plan for Smart City Sumenep 2019-2028" (Sumenep Government 2019). However, the lack of socialization and communication with the village government causes the implementation was not smoothly ran. Even so, it is hoped that spatial planning can begin to be implemented in the 2020-2025 development period.

The livelihoods of the surrounding population are generally fishermen and overseas laborers. Since the development of tourism started, some people have started to switch their profession such as opening stall and trading around tourist areas. In addition, farming has become an activity that is rarely carried out in this place considering the types of soil that are generally less fertile and limited to marginal crops such as green beans, cassava or similar hedgerows.

The public's view of tourism development is considered "supportive" shown by its participation in developing tourist attraction. Local people participation in general can be seen from the provision of homestays and stalls to supervise tourist needs for tourism which are also considered to be beneficial for surrounding community. The head of Bringsang Village government also stated that the social development of the community due to the management of tourism also opens the public's view to a wider point of view and is shown by increase the number of Diploma and collage level students every year.

Based on the evaluation results, the score for the condition aspect around the tourism area are reaches value up to 712.5 point with weight value are 5 for each category. The value is considered moderate and indicated by the lack of coordination between the village and district governments on regional tourism development. However, with the tourism spatial plan that has entered the implementation stage, tourism management is considered to be able to develop in the future. In addition, the development of education in this region will also support the development of social community quality of life and also support tourism development in the future.

Accommodation

This area was supported by availability of various types of accommodation, such as hotels, homestays with local resident's rental houses. Hotels can be found in the tourist area of Sembilan Beach in Bringsang Village with good quality and available up to 20-25 rooms. In addition, homestays are available in each region with relatively uncertain price variants, but has relative cheaper price compared to hotels. This is supported by the local culture that works together to help others, including tourists which came to this area. Besides, by staying at the resident's homes, tourists can enjoy the cultural tourism experience of the cultural tourism more closely.

From this accommodation aspect, the evaluation score is 90 with weight value are 3 for each indicator. This value is the highest score in this category and indicates the feasibility of this location as tourism development. In particular, the development of homestays from local communities is also supporting aspect of the development regional for eco-tourism.

Supporting Facilities and Infrastructure

Generally, tourism facilities can be classified as completed in this region. Rest area facilities, places of worship, and toilets are supported by the existence of a worship center that is available for tourists. Shopping centers, restaurants and souvenirs stall are also scattered in every sub-district in the region. This type of culinary specialties can also be found at certain times and provides its own uniqueness and charm. Local parking areas are also freely available at each attraction point to support tourist activities. Public infrastructure such as post offices,

telephone networks, health centers, electricity networks, etc. are available in good condition. The drinking water network is available and can support tourism activities in this island.

From the results of this evaluation, the aspect showing score up to 300 with weight value are 3 for each. This score is declared feasible and supports tourism activities that available in the Gili Gending Island. In addition, the availability tourism attraction can support the development of the quality and quantity of facilities and infrastructure in the future due to the development of tourism in this region.

Clean Water Availability

Qualitative evaluation was carried out to see the availability of clean water in the Gili Gending Island area. The main source of water in this area is dominated by the groundwater which obtained through wells or similar water pumps. The volume of water in is considered sufficient for community use and there has been no phenomenon of water shortages in the last 10 years. Through observations of resident wells, the relative depth of groundwater varies from 20-30 m and is considered relatively deep. Besides, at certain points there were also some sources of surface water such as Sombher beach water spring.

A relatively large water spring was also found in Aenganyar Village area, precisely in the middle of residential areas. This water source was allegedly active until the construction of water structures began in 5 years ago. Alleged due the inadequacy of the process of building water bodies around springs caused the main water spring was shut off and it no longer flows. However, the existence of this water spring indicates the availability of groundwater in this area is relatively large and shallow to the surface. In addition, at several tourist points there are also found fresh water sources that are considered unique, such as in the area of Somor Tompong Beach and Sumber Beach because their location which right on the coastline. These springs are formed by a unique geological structure and generally come from deep aquifers between impermeable layers.

The distance of each tourism attraction to the water source, which in this case is indicated as its association with local residents—is relatively close. The farthest attraction point distance to the water source in the settlement

area is Kahuripan Beach and Kahuripan Cave which about 3 to 3.5 km. While other attraction points are relatively close to usable water sources. Beside, the water flow is relatively easy due to the flat topography of the area that supports the construction of a piping system. Since this type of area is a Karst region, the use of water for consumption needs to through a simple process such as cooking to separate the lime content in it.

In this evaluation, the score for the aspect of clean water availability is 720 with weight value are 6 of each. This value is considered relatively good and supports tourism activities even though it requires quality improvement for tourist convenience, especially for future tourism development.

From the results of the evaluation above, the summary of Evaluation of the Operational Area Analysis of Natural Tourism Objects and Attractions (ADO-DTWA) score in this area can be seen based on the following table: (**TABEL 4**)

Tabel 4. Assessment Result

Indicator	Assesment Result
Natural Tourism Objects and Attractions	1110
Accessibility	617
Social and economy condition	712,5
Accommodation	90
Facilities and infrastructure	330
Clean Water Availability	720
Total	3549,5
Average	591,6 ^a

^aInclude in 2nd Class that indicate tourism potential in this area is quite feasible to develop

The results of this evaluation was obtained an average value of 591.6 and including in the second class which indicate that "tourism potential in this area is quite feasible to develop". The development potential is supported due the high value of tourist attraction which shows the high potential of natural tourism. In addition, the social local community which is relatively thick with the culture of mutual cooperation typical of the local Madurese also can be another unique attraction for tourism development. With the character of natural tourism that supported by the social capital of the local community, the development of an Ecotourism system can be a

suitable development alternative to optimize tourism development while maintaining the sustainability of the region's nature. In the process of implementing this system, the synergy between the district government and the village level government is needed to support the welfare of the community in the future.

Conclusion

From the results of this evaluation, it was obtained an average value of 591.6 and including in the second class which indicate that "this area is Moderate Potential for Tourism Development" that show tourism potential in this area was quite feasible to develop. The development potential is supported due the high value of tourist attraction which shows the high potential of natural tourism. In addition, the social local community which is relatively thick with the culture of mutual cooperation typical of the local Madurese also can be another unique attraction for tourism development. With the character of natural tourism that supported by the social capital of the local community, the development of an Ecotourism system can be a suitable development alternative to optimize tourism development while maintaining the sustainability of the region's nature. In the process of implementing this system, the synergy between the district government and the village level government is needed to support the welfare of the community in the future.

Acknowledgements

This Research was funded as Non-tax revenue grant in 2020 by Institute for Research and Community Service, State University of Malang.

Reference

- Bian, Zhengfu, Hilary Iinyang, John Ldaniels, Frank Otto, and Sue Struthers. 2010. "Environmental Issues From Coal Mining And Their Solutions." *Mining Science and Technology (China)* 20(2):215–23.
- BPS. 2019. *Perkembangan Pariwisata Jawa Timur (No. 30/05/35/Th. XVII)*. Jakarta.
- BPS (Badan pusat Statistik). 2019. *Statistik Sumberdaya Laut Dan Pesisir*. Vol. 4. Jakarta: Badan Pusat Statistik.
- BPS (Badan pusat Statistik). 2020. *Kecamatan Gili Genting Dalam Angka*. Jakarta.
- Buck, T., M. Arnold, G. Chazan, and C. Cookson. 2020. *Coronavirus Declared a Pandemic as Fears of Economic Crisis Mount*.
- Buckley, Ralf. 2000. "Tourism in the Most Fragile Environments."
- Coria, Jessica, and Enrique Calfucura. 2012. "Ecotourism and the Development of Indigenous Communities: The Good, the Bad, and the Ugly." *Ecological Economics* 73:47–55.
- Donohoe, Holly, and Roger Needham. 2006. "Ecotourism: The Evolving Contemporary Definition." *Journal of Ecotourism* 5:192–210.
- Fennell, David. 2001. "A Content Analysis of Ecotourism Definitions." *Current Issues in Tourism* 4:403–21.
- Fennell, David. 2003. *Ecotourism: An Introduction (2nd Edition)*. 2nd ed. London: Routledge.
- Gu, Yong, Jie Du, Ya Tang, Xue Qiao, C. Bossard, and Guiping Deng. 2013. "Challenges for Sustainable Tourism at the Jiuzhaigou World Natural Heritage Site in Western China." 37:103–12.
- Hammen, V. C., and J. Settele. 2019. "Biodiversity and the Loss of Biodiversity Affecting Human Health." Pp. 340–50 in, edited by J. B. T.-E. of E. H. (Second E. Nriagu. Oxford: Elsevier.
- Hill, Jennifer. 2009. "Ecotourism and Environmental Sustainability: An Introduction."
- Holshue, Michelle L., Chas DeBolt, Scott Lindquist, Kathy H. Lofy, John Wiesman, Hollianne Bruce, Christopher Spitters, Keith Ericson, Sara Wilkerson, Ahmet Tural, George Diaz, Amanda Cohn, LeAnne Fox, Anita Patel, Susan I. Gerber, Lindsay Kim, Suxiang Tong, Xiaoyan Lu, Steve Lindstrom, Mark A. Pallansch, William C. Weldon, Holly M. Biggs, Timothy M. Uyeki, and Satish K. Pillai. 2020. "First Case of 2019 Novel Coronavirus in the United States." *New England Journal of Medicine* 382(10):929–36.
- Knieps, Stephan. 2020. "Will COVID-19 Turn Germany's Export-Oriented Economy into a Weakness?" *EURACTIV*.
- Kumari, S., M. D. Behera, and H. R. Tewari. 2010. "Identification of Potential Ecotourism Sites in West District, Sikkim Using Geospatial Tools." *Tropical Ecology* 51(1):75–85.

- Kuo, I. Ling. 2002. "The Effectiveness of Environmental Interpretation at Resource-Sensitive Tourism Destinations." *International Journal of Tourism Research* 4:87–101.
- Li, Lele, Tiantian Du, and Chi Zhang. 2020. "The Impact of Air Pollution on Healthcare Expenditure for Respiratory Diseases: Evidence from the People's Republic of China." *Risk Manag Healthc Policy* 13:1723–1738.
- Liang, Wei, and Ming Yang. 2018. "Urbanization, Economic Growth and Environmental Pollution: Evidence from China." *Sustainable Computing: Informatics and Systems* 21.
- Liu, Chunyu, Junsheng li, and Peter Pechacek. 2013. "Current Trends of Ecotourism in China's Nature Reserves: A Review of the Chinese Literature." *Tourism Management Perspectives* 7:16–24.
- Mansour, Shawky, Talal Al-Awhadi, and Salim Al-Hatrushi. 2019. "Geospatial Based Multi-Criteria Analysis for Ecotourism Land Suitability Using GIS & AHP: A Case Study of Masirah Island, Oman." *Journal of Ecotourism* 19:1–20.
- Nahuelhual, Laura, Alejandra Carmona, Paola Lozada, Amerindia Jaramillo, and Mauricio Aguayo. 2013. "Mapping Recreation and Ecotourism as a Cultural Ecosystem Service: An Application at the Local Level in Southern Chile." *Applied Geography* 40:71–82.
- Newsome, David, and Ross K. Dowling. 2010. *Geotourism*: Oxford: Wood Eaton, Oxford: Goodfellow Publishers Ltd, ©2010.
- Nicola, Maria, Zaid Alsafi, Catrin Sohrabi, Ahmed Kerwan, Ahmed Al-Jabir, Christos Iosifidis, Maliha Agha, and Riaz Aghaf. 2020. "The Socio-Economic Implications of The Corona Virus Pandemic (COVID-19): A Review." *Jurnal Surgery* 78:185–193.
- Nino, Kedir, Mamo Yosef, Girma Mengesha, and Kefyalew Sahle. 2017. "GIS Based Ecotourism Potential Assessment in Munessa Shashemene Concession Forest and Its Surrounding Area, Ethiopia." *Applied Geography* 82:48–58.
- Nugroho, Iwan. 2011. *Ekowisata Dan Pembangunan Berkelanjutan*. Yogyakarta: Pustaka Pelajar.
- Nugroho, Iwan, Purnawan Dwikora Negara, and Hefifa Rhesa Yuniar. 2018. "The Planning and the Development of the Ecotourism and Tourism Village in Indonesia: A Policy Review." *Journal of Socioeconomics and Development* 1(1):43–51.
- Oyedotun, Temitayo Deborah. 2020. "Sudden Change of Pedagogy in Education Driven by COVID-19: Perspectives and Evaluation from a Developing Country." *Research in Globalization* 2:100029.
- Pam Wight and Associates. 2001. *Ecotourists: Not a Homogeneous Market Segment*. edited by D. Weaver. Wallingford: CABI Publishing.
- Sumenep Government. 2019. *Executive Summary Smart City Master Plan Sumenep 2019-2028*. Sumenep.
- Peng, Xian, Xin Xu, Yuqing Li, Lei Cheng, Xuedong Zhou, and Biao Ren. 2020. "Transmission Routes of 2019-NCov and Controls in Dental Practice." *International Journal of Oral Science* 12:9.
- Rediff. 2020. "Prices of Agricultural Commodities Drop 20% Post COVID-19 Outbreak." *The Economic Times*. Retrieved (economictimes.indiatimes.com/news/economy/agriculture/prices-of-agricultural-commodities-drop-20-post-covid-19-outbreak/articleshow/74705537.cms).
- Ryan, Chris, Karen Hughes, and Sharon Chirgwin. 2000. "The Gaze, Spectacle and Ecotourism." *Annals of Tourism Research* 27:148–63.
- Sharpley, Richard. 2000. "Tourism and Sustainable Development: Exploring the Theoretical Divide." *Journal of Sustainable Tourism - J SUSTAIN TOUR* 8:1–19.
- Sohrabi, Catrin, Zaid Alsafi, Niamh O'Neill, Mehdi Khan, Ahmed Kerwan, Ahmed Al-Jabir, Christos Iosifidis, and Riaz Agha. 2020. "World Health Organization Declares Global Emergency: A Review of the 2019 Novel Coronavirus (COVID-19)." *International Journal of Surgery* 76.
- Stronza, Amanda. 2007. "The Economic Promise of Ecotourism for Conservation." *Journal of Ecotourism* 6:210–30.
- Ullah, K. 2013. "Finding Suitable Locations for Eco-Tourism Development in Cox's Bazar." *Journal of Ecotourism* 2:1–10.
- Wearing, Stephen, and John Neil. 2009. *Ecotourism, Second Edition: Impacts, Potentials and Possibilities*. 2nd ed. London: Butterworth-Heinemann.

- Weaver, David. 2002. "The Evolving Concept of Ecotourism and Its Potential Impacts." *International Journal of Sustainable Development* 5:251–64.
- WEF. 2019. *The Travel and Tourism Competitiveness Report 2019* [*El Informe de Competitividad de Viajes y Turismo 2019*]. Geneva: the World Economic Forum.