Waste Management System in Kelapa Beach Object Tuban-East Java

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Abstract

Kelapa Beach is one of the tourist attractions located in Panyuran, Tuban Regency, East Java. Every day, tourist visitors to Kelapa Beach are increasing. The more tourist visitors on Kelapa Beach, the more waste generated increases. The increasing amount of waste in the Kelapa Beach area requires an integrated waste management. The integrated waste management system must be adjusted to the composition of the waste on Kelapa Beach, both from tourism activities and marine waste. Based on this, it is necessary to conduct research with the aim of knowing the type of waste and the participation of tourism businesses in waste management at Kelapa Beach. This type of research is a quantitative descriptive study. The method used in this research is quantitative analysis. The results of this study are in the form of data on organic and inorganic waste and the participation of business actors in waste management. The level of participation of tourism business actors in decision making is 37% which means it is not good, in implementation it is 67.8% which means quite good, in taking benefits of 100% which means very good, and in evaluation it is 95% which means very good. Based on the index participation in benefit taking and evaluation can be maintained, while participation in decision making and implementation can be improved in waste management.

Keywords: Kelapa Beach; Waste Management, Tourism Objects; Business Actor Participation; Types Of Waste

1. Introduction

Indonesia is the largest archipelago in the world, consisting of more than 17,000 islands and a coastline of 81,000 km. Of the 81,000 km long coastline, Indonesia has beaches that are more than 6,360 km long. Given this, beaches have great potential to be used as objects. However, the development of economic activities in coastal areas must be harmonized with good coastal environmental management. This is because the coastal area as a transitional area that connects land and marine ecosystems is very vulnerable to damage and changes caused by various human activities on land and at sea at sea (Sholeh 2019) (Sudiyono 2016) (Wattimena & Ayal 2018). Many developing countries, including Indonesia, have developed different development strategies. Part of that strategy worked. Basically, the development of natural tourism is an effort to use natural resources for tourism (Anggraini 2018) (Weny 2020) (Wiprestika 2020). Tourism in Indonesia is a sector that has the potential to be developed and managed optimally by the community. The development of tourism can affect the life of the surrounding community, social and economy (Lawang 2015) (Purnomo et al. 2013) (Utami 2013) (Yuniarti et al. 2018). Law Number 10 of 2009 supports various types of tourism activities provided by city governments, businessmen, communities and local governments in the form of facilities and services. This is the support and contacts needed for these sectors to ensure sustainability and protection (Undang-Undang Republik Indonesia Nomor 10 Tahun 2009 Tentang Kepariwisataan) (Hasia 2019) (Setiawan & Saefulloh 2019) (Sun 2016) (Masruroh & Nurhayati 2016) (Setiawan 2016).

The coastal environment is a specific and dynamic area that is rich in biodiversity and even benefits the community. Cleaning the beach from rubbish is one of the considerations that tourists must visit. The main cleaning of coastal tourism areas includes cleaning of beaches, settlements, accommodation, ports, etc (Darmawi 2017). Environmental problems that often arise in coastal tourism areas are garbage problems on the beach. There are two types of garbage that pollute the beach, namely garbage from tourism activities and garbage from the sea. So far, the problem of rubbish in beach resorts has not been overcome effectively (Aini 2012) (Apriliani et al. 2021) (Mardianto 2018). In general, the waste problem in coastal tourism areas cannot be resolved

optimally even though it contains a waste management component. In fact, many sanitation managers face various obstacles and constraints that result in services not being in accordance with technical regulations and community expectations. Beach tourism consists of organic and inorganic waste from land rubbish and rubbish carried by waves and sea breezes (Yuliadi 2017) (Manik 2018). If not managed, waste can become a serious threat to the preservation and conservation of natural tourism areas. On the other hand, if managed properly, waste has potential values such as job creation, quality improvement and environmental aesthetics, as well as other uses such as compost, which can be used to improve critical areas in various parts of Indonesia. also affects the outflow of state foreign exchange. For tourist areas, a waste management system can be planned based on the Ministry of Public Works Regulation Number 3 of 2013. The management system consists of operational aspects such as classification and packaging, collection, use, processing, delivery, transportation and completion, as well as nontechnical aspects which consist of aspects institutions, regulations / laws, financing, and community participation (Ramadan et al. 2019) (Kemenpu) (Sudiro et al. 2018).

Tuban has many interesting tourist attractions to offer, including Kelapa Tuban Beach, which is located in the north of East Java. Tuban has a complete landscape, from hills to beaches. The following are recommendations for various beaches in Tuban for traveling friends who want to spend their holidays on the north coast of East Java (Muhammad Sigit Prabowo 2020). Kelapa Beach is one of the tourist attractions in Panyuran Village, Palang District, Tuban Regency, East Java. Kelapa Beach Tourism in Tuban is a tourist spot full of tourists on weekdays and holidays. This place is very nice and can provide a different feel for our daily activities (Adi Nugroho). The problem of waste management in the Pantai Kelapa Tuban tourist area is the limited amount of landfills provided by the management and local government. The number of tourist visitors to Kelapa Tuban Beach is increasing every day. The more tourist visitors on Kelapa Tuban Beach, the more waste generated increases. The increasing amount of waste in the Kelapa Beach area requires an integrated waste management. The integrated waste management system must be adjusted to the composition of the waste at Kelapa Tuban Beach, both from tourism activities and marine waste. Based on this, it is necessary to conduct research with the aim of knowing the type of waste and the participation of tourism businesses in waste management at Kelapa Tuban Beach.

2. Research Methods

2.1 Types and Research Methods

This type of research is a quantitative descriptive study. Descriptive research describes or describes the phenomenon of waste or the relationship between the phenomena of one's attitude towards caring for waste which is researched systematically, factually and accurately. The method used in this research is quantitative analysis to explain these data. This research was conducted in January 2021 at Pantai Kelapa, Panyuran Village, Palang District, Tuban Regency, East Java. The locations are presented in Fig 1.

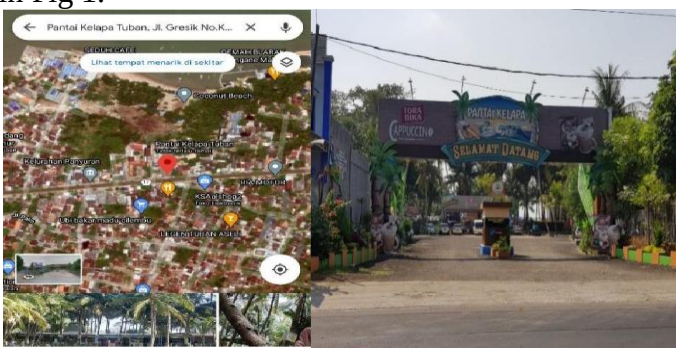

Fig 1. Research Location of Kelapa Tuban Beach Area
(Source: Google maps documentation for coastal areas, 2021)

2.2 Research Steps

The first stage in this research is to make field observations, this is done to determine the conditions in the field that will be used for research. Then the determination of the location that will be used as a research location is Kelapa Tuban Beach which has sandy soil characteristics. The tools used in this research are: 1) writing instruments; 2) handbooks or questionnaires; 3) camera or hp. The materials used in this research are the types of waste and the environmental participation of the Kelapa Tuban beach community towards rubbish.

2.3 Data Collection Technique

Data collection in this study was carried out using primary data: the data collection technique with the primary survey was carried out by distributing questionnaires and interviews to tourism entrepreneurs in Kelapa Tuban Beach. In addition, field observations were made to support the data in this study. As well as Secondary Data: Secondary surveys were conducted to complement the data from primary data collection in the form of literature reviews related to the research conducted. Furthermore, secondary data collection was also carried out in the form of data from research related institutions.

2.4 Data Analysis

The data analysis technique of the Miles and Huberman model was used in this study. The analysis was carried out at the time of data collection and after the data collection was completed within a certain period of time. At the time of the interview, the researcher conducted an analysis of the respondents' responses. If the answer is not satisfactory, the researcher will proceed to the question. To some extent, you will get reliable data.

3. Result and Discussion

3.1 Result

Based on the types of waste found in the Kelapa Beach Area, Panyuran Village, Palang District, Tuban Regency, East Java, there are several components of waste from organic and inorganic waste types. The number of waste components found is presented in Table 1. And the results of the analysis of the data on the participation of the environmental community of Kelapa Tuban Beach against the waste seen based on the Participation Index in Decision Making, the Participation Index in Implementation, the Participation Index in Benefit Taking, and the Participation Index in Evaluation are presented in Tables 2, 3, 4, and 5.

(a) (b) (c)

(d) (e) (f)

(g)

Figure 2. Types of waste found in the Pantai Kelapa Tuban area a). leftover food; b). letfover raw materials; c). paper, cardboard, newspaper; d). coconut; e). plastic bags; f). packaging wrap, g). drink bottle
(Source: Personal Documents)

Table 1. Types of Waste in Kelapa Beach Tourism

Type	Rating	Component	Amount
Organic Trash	1	Leftover food	57
	2	Leftover raw materials (fish, vegetables, fruit, spices, etc)	50
	3	Paper / cardboard / newspaper	48
	4	Others	11
Anorganic Trash	1	Plastic bags	73
	2	Food wraps / packaging (sachets, noodle wrappers, snack wrappers, etc)	56
	3	Drink bottle	47
	4	Others	23

Table 2. Participation in the Decision-Making Process

Number	Benchmark	Yes	No	Participation Rate
1	Participation in meetings related to waste management	30	43	41%
2	Activeness in providing suggestions or opinions	24	49	33%
	AMOUNT	54	92	37%

Table 3. Participation in Implementation

Number	Benchmark	Yes	No	Participation Rate
1	Reducing waste generation	18	55	25%
2	Reuse of plastic bags, cardboard, bottles, paper, etc.	22	51	30%
3	Separating waste by type (organic and inorganic)	10	63	14%
4	Ownership of cleaning tools at the place of business	64	9	88%
5	Routine cleaning the place of business	73	0	100%
6	Collect trash into the trash	73	0	100%

7	Take the trash by yourself to a temporary garbage collection area	49	24	67%
8	Payment of cleaning fees	59	14	81%
9	Comply with the applicable hygiene rules	69	4	95%
10	Reprimand violators of hygiene rules (tourists / fellow traders)	57	16	78%
	AMOUNT	494	236	67,8%

Table 4. Participation In Benefit-Taking

Number	Variable	Yes	No	Participation Rate
1	Convenience of business actors related to cleanliness of business premises	73	0	100%
2	Tourist comfort related to cleanliness of business premises	73	0	100%
	AMOUNT	146	0	100%

Table 5. Participation in Evaluation

Number	Variable	Yes	No	Participation Rate
1	Waste management is in accordance with what was planned and expected	69	4	95%
	AMOUNT	69	4	95%

3.2 Discussion

The waste that was studied was the waste produced by the tourism business actors in Kelapa Tuban Beach Tourism and had different characteristics. Types of waste can be divided into organic waste and inorganic waste (Kurniaty et al. 2016) (Yudhistirani et al. 2016). Organic waste is waste that is easily biodegradable and biodegradable, while inorganic waste is waste that is not easily biodegradable (Hasibuan 2016) (Febriadi 2019). Tourism entrepreneurs produce waste from organic and inorganic types. The production and service processes for tourists require raw materials and produce waste as the final product. This garbage cannot be avoided. The bigger the production process, the greater the waste generation. The food stall produces food and starts the production process at the request of the customer. Food raw materials that have been purchased from the market and distributors are then washed and prepared to be processed into order menus. Organic waste is generated during preparation, maintenance and cleaning (Isnaeni 2020) (Wani et al. 2019).

According to the results of the study (see Table 1), the highest amount of organic waste was produced in tourist leftovers (57 respondents). Food that is not eaten by customers will be thrown away by the entrepreneur and finally thrown into the trash. Apart from food scraps, 50 respondents answered that raw food ingredients that have gone through the cleaning and cooking preparation processes are also considered garbage. In addition, most of the organic waste is produced in the form of paper, cardboard and newspapers. This waste comes from the packaging of food raw materials that have been sent from traders or purchased at the market. Apart from organic waste, tourism businesses also produce inorganic waste. Raw material packaging is the main form of inorganic waste. Most business operators buy food items that are carried using plastic bags. According to 73 respondents, most of the inorganic waste comes from their tourism business, namely plastic bags. Other forms of plastic packaging include instant drink wrappers, instant noodles, instant spices, and snacks. Ease of serving and tourist demand are the main factors for any business actor to provide instant food and drinks. As many as 56 respondents stated that they owned, served, and produced inorganic waste from the packaging. Ready-to-drink drinks packaged in plastic bottles, glass bottles and cans are the third largest inorganic waste

produced by tourism businesses. Commercial areas which include shops, restaurants, markets, offices, hotels, and others. The types of waste generated include paper, cardboard, plastics, wood, food scraps, glass, metals, hazardous and toxic waste, etc (Hairisah 2020) (Bestari 2019) (Putra & Yulis 2019). In terms of packaging materials, cardboard and corrugated paper are generally the main types of waste generated by food service companies. Other important types produced by food service operations include glass, metals and plastics (Sulhatun 2019) (Haseng 2020).

Participation in Decision Making

The variable in this section consists of two parts which aim to determine the participation of tourism company actors in waste management planning. The participation of tourism companies in the participation process of waste management planning is 41%. The participation rate in submitting proposals was 33% (see Table 2). Most of the respondents admitted that even though they felt lazy and tired after a tiring day at work, they did not follow the process, even though they ended up executing the results of the meeting decisions. Vote to listen and accept every decision made. There is a positive and significant relationship between education level and population participation. The higher the level of education, the wider the knowledge about environmental management, therefore the higher the level of education. conscience (Aryanti 2019) (Jaya 2018).

Participation in Implementation

Based on the results of the questionnaire, the participation rate in reducing waste is 25%. The participation rate for reusing used goods is 30%. Meanwhile, the process of separating organic and inorganic waste is only 14%. This condition shows that most tourism companies do not reduce and classify waste. At this stage the amount of waste generated will increase along with the increase in the production process at the business facility. Some of the perpetrators reused various items such as plastic bags, sauce bottles and soy sauce. and cartons for storing food raw materials. Information and benefits from the waste reduction and classification process are the main reasons why this activity is not carried out. Most of the inorganic waste originating from the tourism business comes from the packaging and packaging of food raw materials. Large quantities where retailers are encouraged to ship ingredients with minimal packaging, replace packaging with bio packaging, and refrigerate food ingredients to maintain quality. By reducing packaging, not only reduces waste, but also transportation costs (Dwiyanto 2011) (Abduh 2018).

All respondents stated that they carry out garbage collection and cleaning work at the business premises every day with a 100% participation rate. The level of participation in this phase can also be shown by owning cleaning equipment with a participation rate of 88%. Cleaning equipment that is usually owned by tourism companies in the form of trash cans, brooms, dustpan or dustpan, rags, etc. Commercial premises are cleaned independently using the cleaning tools owned by each commercial operator, then the waste is placed in containers. collected. Apart from cleaning their respective business premises, members of the company group do daily cleaning work in which the coastal environment works together. Economic actors collect waste in a position available for them to be transported by officers and stored in a landfill (TPA). The transportation of waste to the final landfill (TPA) location is carried out by means of a roller carriage. Entrepreneurs collect garbage at the station provided and the officers then transport it to be deposited at the final disposal site (TPA) every night. Because 67% of economic actors admit to participating in the transportation activities themselves, this is because the Final Disposal Site (TPA) is not too far from their business location. It is best to carry out garbage collection every day so that garbage does not accumulate and cause unpleasant odors or unpleasant views. In addition, the accumulated litter can affect the image of Kelapa Beach as a marine tourism destination in Tuban Regency.

The waste generated by tourism activities ends at the TPA not far from Pantai Kelapa Tuban. It is at this stage that the waste is processed by separating it according to the type of organic and inorganic waste. Inorganic waste with retail value, such as plastic and glass bottles, is collected and sold to second hand merchants. Inorganic waste takes a long time and does not degrade completely. Therefore, they can be handled according to the 4R principle (Reuse, Reduce, Recycle, Replace) (Marliani 2015). When sold, inorganic waste such as plastic can be used as artisanal material that can be used as souvenirs for tourists. In addition, plastic waste can be used

as environmentally friendly bricks to replace bricks that can be used in the physical construction of buildings (Fatimah 2020). The collected organic waste is burned by the manager. Burns can cause air pollution and have a negative impact on the environment (Broto et al. 2020) (Ayen et al. 2016). In principle, organic waste can be processed and used into goods with retail value, namely compost. Organic waste is collected in the hole and then waits for the decomposition process to take place. then dried and made into compost products which can then be used. Compost products can be sold to farmers or visitors so that managers can experience economic benefits (Kumalaningsih 2014)p (Prasetyo & Arifin 2018).

Participation In Benefit-Taking

The benefits of dumping garbage at Kelapa Tuban beach are felt by tourism companies and visiting guests (see Table 4). The atmosphere of a clean and tidy business place gives a sense of comfort. In addition, the manager stated that tourists will choose their local businesses. The shop looks neat and tidy. A higher income is a benefit that commercial gamblers can experience immediately. This situation increases with the number of guests, especially on weekends and national holidays. Income level is one of the factors determining participation in waste management (Posmaningsih 2016) (Pratiwi et al. 2018). In addition, participation is high because economic actors understand the benefits of good waste management. Public awareness about the influence of waste encourages community participation in waste management (Yuliastuti 2013) (Setyoadi 2018) (Nugraha et al. 2018).

Participation in Evaluation

Evaluation is an important stage in a management cycle. This stage is carried out to determine the level of achievement of program objectives and to find out where the deficiencies are and their reasons (Casban et al. 2020) (Sutabri 2012). Although many do not play an active role in the decision-making process, they still believe that the implementation of waste management at Kelapa Tuban Beach Tourism is in accordance with the plan (see Table 5).

4. Conclusion

The tourism business actors in Kelapa Tuban Beach Tourism produce organic and inorganic waste from services and services provided to tourists. The types of organic waste produced are in the form of guest food leftovers, food raw material leftovers, paper, cardboard, cardboard, newspapers, etc. The types of inorganic waste produced are in the form of plastic bags, food packaging wrappers, plastic and glass bottles, and others. The level of participation of tourism business actors in decision making is 37% which means it is not good, in implementation it is 67.8% which means quite good, in taking benefits of 100% which means very good, and in evaluation it is 95% which means very good. Based on the index participation in benefit taking and evaluation can be maintained, while participation in decision making and implementation can be improved in waste management

References

Abduh IMN. 2018. Ilmu dan rekayasa lingkungan. [place unknown]: SAH MEDIA.

Adi Nugroho. Pesona Keindahan Wisata Pantai Kelapa di Tuban.

Aini N. 2012. Kebersihan Wisata Pantai di Indoensia, Pekerjaan Rumah Pemerintah.

Anggraini M. 2018. gastrodiplomasi sebagai strategi pengembangan pariwisata kuliner Indonesia dalam mendukung program ASTP. In: Semin Nas dan Disk Panel Multidisiplin Has Penelit dan Pengabdi Kpd Masy 2018. Vol. 1. [place unknown].

Apriliani IM, Purba NP, Dewanti LP, Herawati H, Faizal I. 2021. Pelatihan Pengumpulan Sampah Laut Kepada Pengunjung Pantai Pangandaran. Farmers J Community Serv. 2(1):56–61.

Aryanti R. 2019. HUBUNGAN TINGKAT PENDIDIKAN ORANG TUA DAN KEMANDIRIAN BELAJAR SISWA DENGAN HASIL BELAJAR IPS KELAS IV SDN DI MARGOREJO KABUPATEN PATI.

Ayen D, Umar AF, Elwindra E. 2016. Gambaran Proses Pengolahan Sampah dan Dampaknya Terhadap Kesehatan Masyarakat di Wilayah TPA Bantar Gebang Bekasi Tahun 2016. J Persada Husada Indones. 3(11):59–71.

Bestari HI. 2019. STUDI TIMBULAN, KOMPOSISI DAN DENSITAS SAMPAH DI TPA BANYUROTO, KULON PROGO, DAERAH ISTIMEWA YOGYAKARTA.

Broto S, Nazori AZ, Gata G. 2020. Penyuluhan Bank Sampah dan Pemilahan Sampah Bahan Baku Biogas Skala Rumah tangga. JAM-TEKNO J Pengabdi Kpd Masy TEKNO. 1(1):20–25.
Casban ST, Marfuah U, Sunardi D, Dewi AP. 2020. Evaluasi Pelatihan Pencegahan dan Penanggulangan Kebakaran di Lingkungan Rumah Tangga. Pros Konf Nas Pengabdi Kpd Masy dan Corp Soc Responsib. 3:470–478.
Darmawi A. 2017. Potensi Timbulan Sampah Pada Objek Pariwisata Pantai. J Penelit Teknol Ind. 9(1):61–71.
Dwiyanto BM. 2011. Model peningkatan partisipasi masyarakat dan penguatan sinergi dalam pengelolaan sampah perkotaan. J Ekon Pembang Kaji Masal Ekon dan Pembang. 12(2):239–256.
Fatimah I. 2020. IMPLEMENTASI PEMBUATAN ECOBRICK DALAM MEMBENTUK RASA TANGGUNG JAWAB DAN KEPEDULIAN SISWA KELAS V TERHADAP LINGKUNGAN DI MI MA'ARIF GLOBAL BLOTONGAN SALATIGA TAHUN PELAJARAN 2019/2020.
Febriadi I. 2019. Pemanfaatan Sampah Organik Dan Anorganik Untuk Mendukung Go Green Concept Di Sekolah. Abdimas Papua J Community Serv. 1(1):32–39.
Hairisah SA. 2020. GAMBARAN PENGELOLAAN SAMPAH RUMAH TANGGA DI PEKON SUKANANTI KECAMATAN WAY TENONG KABUPATEN LAMPUNG BARAT TAHUN 2020.
Haseng AY. 2020. Usaha Bank Sampah The Gade Clean And Gold Dalam Menangani Sampah Di Maumere Dan Makna Etis-Teologisnya Menurut Ensiklik Laudato Si.
Hasia R. 2019. STRATEGI PELAYANAN DINAS PARIWISATA DAN KEBUDAYAAN DALAM MENINGKATKAN KUNJUNUNGAN WISATAWAN DI OBJEK WISATA KOTA BATU (STUDI PADA DINAS PARIWISATA DAN KEBUDAYAAN KOTA BATU). Jisip J Ilmu Sos dan Ilmu Polit. 8(2):136–143.
Hasibuan R. 2016. Analisis dampak limbah/sampah rumah tangga terhadap pencemaran lingkungan hidup. J Ilm Advokasi. 4(1):42–52.
Isnaeni A. 2020. Implementasi Halal Supply Chain Management pada Industri Pengolahan Makanan (Studi Kasus: Restoran Taman Pringsewu Yogyakarta).
Jaya MN. 2018. EKSISTENSI PENYULUH PERTANIAN DALAM PELAKSANAAN KOMUNIKASI PEMBANGUNAN PARTISIPATIF UNTUK KEBERDAYAAN PETANI. J Agribisnis Terpadu. 11(2):196–212.
Kemenpu. Penyelenggaraan Prasarana Dan Sarana Persampahan Dalam Penanganan Sampah Rumah Tangga Dan Sampah Sejenis Sampah Rumah Tangga. 2013.
Kumalaningsih S. 2014. Pohon Industri Potensial. [place unknown]: Universitas Brawijaya Press.
Kurniaty Y, Nararaya WHB, Turawan RN, Nurmuhamad F. 2016. Mengefektifkan Pemisahan Jenis Sampah Sebagai Upaya Pengelolaan Sampah Terpadu Di Kota Magelang. Varia Justicia. 12(1):135–150.
Lawang M. 2015. Penegakan Hukum Terhadap Pencemaran Dan Perusakan Lingkungan Objek Wisata Berdasarkan Undang-Undang Nomor 10 Tahun 2009. Lex Crim. 4(7):58–66.
Manik KES. 2018. Pengelolaan lingkungan hidup. [place unknown]: Kencana.
Mardianto F. 2018. Strategi Pengelolaan Clungup Mangrove Conservation (CMC) Berdasarkan Hasil Relasi Kelembagaan Di Pantai Clungup Dusun Sendang Biru Desa Tambakrejo Kecamatan Sumbermanjing Wetan Kabupaten Malang Jawa Timur.
Marliani N. 2015. Pemanfaatan limbah rumah tangga (sampah anorganik) sebagai bentuk implementasi dari pendidikan lingkungan hidup. Form J Ilm Pendidik MIPA. 4(2).
Masruroh R, Nurhayati N. 2016. Strategi Pengembangan Pariwisata dalam Rangka Peningkatan Pendapatan Asli Daerah di Kabupaten Kuningan. In: Pros Semin Nas IPTEK Terap 2016 Pengemb Sumber Daya Lokal Berbas IPTEK. Vol. 1. [place unknown].
Muhammad Sigit Prabowo. 2020. Jelajah Pantai di Tuban dalam Sehari, Ini Rekomendasinya.
Nugraha A, Sutjahjo SH, Amin AA. 2018. Analisis Persepsi Dan Partisipasi Masyarakat Terhadap Pengelolaan Sampah Rumah Tangga Di Jakarta Selatan. J Nat Resour Environ Manag. 8(1):7–14.
Posmaningsih DA. 2016. Faktor-faktor yang mempengaruhi partisipasi masyarakat dalam pengelolaan sampah padat di Denpasar Timur. J Skala Husada J Heal. 13(1).
Prasetyo A, Arifin MZ. 2018. House of Quality Kampung Organik. [place unknown]: Indocomp.
Pratiwi FAYU, Soemirat J, Ainun S. 2018. Hubungan Partisipasi Masyarakat terhadap Sistem Pengelolaan Sampah di Kelurahan Sukaluyu. J Reka Lingkung. 6(1).
Purnomo H, Sulistyantara B, Gunawan A. 2013. Peluang usaha ekowisata di kawasan cagar alam Pulau Sempu, Jawa Timur. J Penelit Sos dan Ekon Kehutan. 10(4):247–263.
Putra AY, Yulis PAR. 2019. Edukasi Pemilahan dan Pengelolaan Jenis Sampah di SDN 007 Pangkalan Baru Kecamatan Siak Hulu Kabupaten Kampar. Community Educ Engagem J. 1(1):87–93.
Ramadan BS, Safitri RP, Cahyo MRD, Wibowo YG. 2019. Optimasi sistem pengangkutan sampah kecamatan jati, kabupaten kudus, jawa tengah. J Presipitasi Media Komun Dan Pengemb Tek Lingkung. 16(1):8.
Setiawan F, Saefulloh A. 2019. Kolaborasi yang dilaksanakan di kawasan wisata dermaga Kereng Bangkirai Kota Palangka Raya. J Adm. 10(2).
Setiawan RI. 2016. Pengembangan sumber daya manusia di bidang pariwisata: perspektif potensi wisata daerah berkembang. J Penelit Manaj Terap. 1(1):23–35.
Setyoadi NH. 2018. Faktor Pendorong Keberlanjutan Pengelolaan Sampah Rumah Tangga Berbasis Masyarakat Di

Kota Balikpapan Dan Bogor. J Sains Teknol Lingkung. 10(1):51–66.
Sholeh M. 2019. KECERDASAN GLOBAL DALAM PERSPEKTIF GEOGRAFI UNTUK PENGUATAN LITERASI GEOMARITIM.
Sudiro S, Setyawan A, Nulhakim L. 2018. Model Pengelolaan Sampah Permukiman di Kelurahan Tunjung Sekar Kota Malang. Plano Madani J Perenc Wil dan Kota. 7(1):106–117.
Sudiyono S. 2016. STRATEGI ADAPTASI NELAYAN DESA TANJUNG BERAKIT DALAM MENGHADAPI PERUBAHAN IKLIM. J Masy dan Budaya. 18(2):107–125.
Sulhatun S. 2019. PYROTECHNOLOGY 4 IN 1: PRINSIP DASAR TEKNOLOGI PIROLISA BIOMASSA.
Sun J. 2016. Kebijakan Pemerintah Daerah terhadap Kepariwisataan Festival Tahunan Cap Go Meh sebagai Upaya Pariwisata Berdasarkan Pasal 14 Ayat (1) Jo. Pasal 23 Undang-undang Nomor 10 Tahun 2009 Tentang Kepariwisataan di Kota Singkawang. J Nestor Magister Huk. 3(3):209669.
Sutabri T. 2012. Analisis sistem informasi. [place unknown]: Penerbit Andi.
Undang-Undang Republik Indonesia Nomor 10 Tahun 2009 Tentang Kepariwisataan.
Utami SM. 2013. Keterlibatan Masyarakat Lokal dalam Pengembangan Potensi Wisata di Kabupaten Semarang. In: Forum Ilmu Sos. Vol. 40. [place unknown].
Wani YA, Tanuwijaya LK, Arfiani EP. 2019. Manajemen Operasional Penyelenggaraan Makanan Massal (Edisi Revisi). [place unknown]: Universitas Brawijaya Press.
Wattimena JD, Ayal MR. 2018. Analisis Perubahan Garis Pantai Desa Rutong Kota Ambon. J Tek Sipil. 14(2):115–136.
Weny HK. 2020. Dampak Pembangunan Wisata Pantai Kelapa Terhadap Perekonomian Masyarakat Lokal (Studi kasus di Desa Panyuran, Kecamatan Palang, Kabupaten Tuban).
Wiprestika IP. 2020. Pemberdayaan Masyarakat pada Destinasi Pengembangan Wisata Pantai Pulau Merah dalam Meningkatkan Perekonomian Masyarakat (Studi Kasus Pantai Pulau Merah di Desa Sumberagung Kecamatan Pesanggaran Kabupaten Banyuwangi).
Yudhistirani SA, Syaufina L, Mulatsih S. 2016. Desain Sistem Pengelolaan Sampah Melalui Pemilahan Sampah Organik Dan Anorganik Berdasarkan Persepsi Ibu-Ibu Rumah Tangga. J Konversi. 4(2):29–42.
Yuliadi LPS. 2017. Optimalisasi pengelolaan sampah pesisir untuk mendukung kebersihan lingkungan dalam upaya mengurangi sampah plastik dan penyelamatan pantai pangandaran. J Pengabdi Kpd Masy. 1(1).
Yuliastuti IAN. 2013. Partisipasi masyarakat dalam pengelolaan sampah di Kabupaten Badung. E-Jurnal Ekon dan Bisnis Univ Udayana.
Yuniarti E, Soekmadi R, Arifin HS, Noorachmat BP. 2018. Analisis Potensi Ekowisata Heart Of Borneo Di Taman Nasional Betung Kerihun Dan Danau Sentarum Kabupaten Kapuas Hulu. J Nat Resour Environ Manag. 8(1):44–54.