URGENCY AND STRATEGY OF WASTE MANAGEMENT ON NATURAL TOURISM AREAS IN INDONESIA: LITERATURE REVIEW

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ABSTRACT

Nowadays, natural tourism waste management in Indonesia has begun to be considered as one of the priorities of all circles. Tourist visits to this natural tourist area will have a positive and negative impact. One of the positive impacts that arise is the economic turnaround and the improvement of welfare. However, along with the increase in human activities, there is a negative impact on the environment, namely the increase in waste generation. Existing tourism must remain based on environmental sustainability so that the image of a natural tourism area continues to be maintained. As the number of tourist destinations and visitors increases, waste management in natural tourism areas is also an urgency that must be considered. The aim of this study is to examine the urgency and management strategies of natural tourism areas in Indonesia. The research method used is descriptive exploratory based on literature review. Through a systemic waste management strategy, the waste problem will be handled. Waste management strategies that can be carried out are simple management, reduction and restriction activities by natural tourism area managers, 3R-based management such as waste banks and TPS3R, support from policy stakeholders in the form of providing binding facilities and regulations, and the development of ecotourism-based natural tourism areas.

Keywords: waste management, waste of tourism, 3R

INTRODUCTION

The condition of Indonesian tourism, which is now gradually recovering, has increased the interest of tourists to visit various tourist destinations, one of which is natural tourism. According to site data of Kementerian Pariwisata dan Ekonomi Kreatif (2024) shows that the cumulative number of foreign tourist visits for the period January to August 2024 was 9,092,856 visits, an increase of 20.38% compared to the previous period which amounted to 7,553,292 visits. After the Covid-19 pandemic, tourist travel activities on a family scale and large groups are commonplace and even routine things that are scheduled by the community as a means to enjoy the beauty of nature. According to the travel data of Indonesian tourists released by Badan Pusat Statistik Indonesia (2024), period from January to August 2024 amounted to 674,596,508 trips, an increase compared to the same period in the previous year which amounted to 565,930,690 trips. This tourist visit will have a positive and negative impact. The positive impact that can be caused is an increase in regional and state revenue, while the negative impact that arises is the occurrence of environmental pollution (Ariyanto et al., 2020). One of the environmental pollution that occurs is the increase in waste generation.

Nowadays, natural tourism waste management in Indonesia has begun to be considered as one of the priorities of all circles. Based on Undang-Undang Nomor 18 Tahun 2008 Tentang Pengelolaan Sampah, waste is the remains of human daily activities and/or natural processes in solid form. Based on data of Sistem Informasi Pengelolaan Sampah Nasional (2024) data from 364 Regencies/Cities in 2023 in Indonesia that there is a waste generation of 38,239,557.8 (tons/year). The generation of waste has been reduced by 13.67%, waste handling by 48.12%, managed waste by 61.79%, and unmanaged waste by 38.21%. According to the data, the waste reduction rate is low while unmanaged waste is still above 30%. This indicates that better waste management efforts are still needed. Based on Undang-Undang Nomor 18 Tahun 2008 Tentang Pengelolaan Sampah, waste management is defined as a systematic, comprehensive and sustainable activity that includes waste reduction and handling. Referring to the concept of sustainable tourism, good waste and waste management is one of the important aspects that must be considered as an effort to maintain the sustainability of the destination (Rachmadiarazaq et al., 2023). On the other hand, if tourism managers and tourists who visit continue to ignore waste management, the phenomenon of tourism being defeated by waste will arise, and it can even have a bad impact such as pollution of marine ecosystems, air pollution, disruption of food chains for plants and animals, and human health (Sudiatmika, 2023). Waste generation in natural tourism is often a problem for its managers because natural tourism locations are usually far away and difficult to access to Waste Treatment Sites.

The problem of waste in natural tourism cannot be classified as a simple problem because the types of waste generated are also diverse. In fact, garbage in coastal areas is also the effect of human activities on land that are carried from river estuaries or the sea (Sudiatmika, 2023). The types of waste that are often found in natural tourist destinations are organic waste in the form of food scraps, leaves and ratings and inorganic waste in the form of plastic food wrappers (Ariyanto et al., 2020). As we know that the decomposition process of inorganic waste, especially plastic, is very difficult to occur naturally and takes a long time. Another thing that we often encounter is the lack of waste management in tourist destinations. Waste for Change on its page states that the lack of cleaning facilities in the form of adequate trash cans is also one of the factors causing the waste problem. The availability of garbage cans in public areas, such as terminals, markets, city parks, and tourism, is still relatively minimal. In the end, it is not uncommon for visitors to throw garbage carelessly.

Tourism waste is included in household waste, which must be managed, namely by reducing and handling waste (Aziz, Dewilda, & Putri, 2020). Conventional waste management methods are still often found, namely through the direct incineration process (Hesarika et al., 2022). Massive disposal of tourism waste directly sent to the Final Disposal Site is also considered not a wise way. The crucial reason for waste management is important for tourist destinations because it can increase the interest and comfort of visitors even though the problem of tourism waste is inseparable from visitor behavior (Herdiansah, 2021). Waste management in natural tourist destinations has many obstacles and is not paid attention to due to several factors, such as the availability of human resources, government regulations or policies, and even difficulties in accessing the terrain so that waste is not managed properly. This study aims to analyze the urgency and development of waste management in natural tourism. It is hoped that the research can formulate a good waste management strategy in tourist destinations that has an impact on

increasing the number of visitors but does not ignore the quality and environmental sustainability.

METHOD

This study uses a qualitative approach with a literature review method. This approach is used to gain an in-depth understanding of natural tourism waste management through the analysis of various relevant literature sources. The design of this study is descriptive and exploratory to describe the development of natural tourism waste management and identify the main themes that emerge from the analyzed literature.

The data used in this study are in the form of scientific articles and community service articles published in Indonesian and English published in the last 5 years (2019 – 2024) using keywords such as "tourism waste management", "natural tourism waste management", "tourism waste", "natural tourism waste", "waste generation", "natural tourism waste generation", "waste generation management", and "natural tourism waste generation management".

The first stage was to collect data from various academic databases Google Scholar, ScienceDirect, the official websites of environmental organizations and communities through the Publish and Perish application. In this research, 500 scientific article titles were obtained. The second stage was sorted according to the theme to be analyzed, then 22 scientific article titles were obtained that were relevant and in accordance with the researcher's frame of mind. After that, descriptive and exploratory analysis is carried out.

RESULT AND DISCUSSION

The Urgency of Waste Management in Indonesia's Natural Tourism Areas

Scientific articles have been collected as many as 22 articles from various types of journals and proceedings from 2019 -2024. The list of scientific articles can be seen in Table 1 (attached) which shows that there are 14 articles published in scientific journals, 4 articles of community service published in imiah journals, and 4 articles in seminar proceedings. All scientific articles are articles published in reputable national journals. The proportion of scientific article categories can be seen in Figure 1.

Figure 1. Distribution of Scientific Article Publications
Source : Researcher Analysis Results

Judging from the number of scientific articles found, the issue of generating natural tourism waste has become an urgency. Figure 1 shows that tourism waste management

has also become one of the community service programs through socialization and application of waste management. This shows that cooperation from all lines is needed in waste management. Socialization regarding the implementation of 3R (Reduce, Reuse, and Recycle) in a simple way is considered very helpful for natural tourism managers (Annisyah Siagian, 2022)′ (Suidarma et al., 2022). Then education on a more systematic and developmental tourism waste management mechanism has also been launched by experts (Aziz, Dewilda, Khair, et al., 2020)′ (Herdiansah, 2021).

In addition to aiming to educate about the waste management system, this education can also be a means of knowledge for tourists to better protect the environment. Another reason is that the management of natural tourism waste is urgent, namely the implementation of tourism activities must be based on the principle of sustainability even though it has been developed into a tourist attraction that is visited by many people (Nurifah & Nabiilah, 2022).

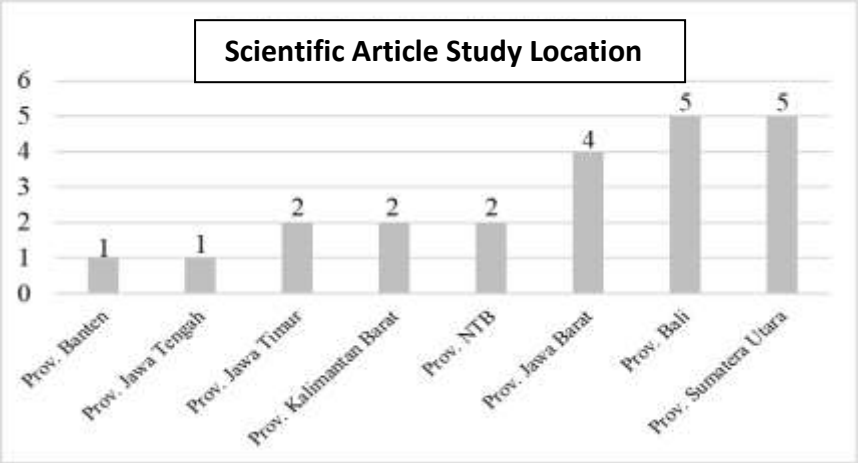

Figure 2. Scientific Article Study Location
(Source : Analysis Results of Researcher)

Figure 2 shows the distribution of the locations of the scientific articles studied, where the provinces of Bali and North Sumatra occupy the highest number of articles, namely five articles each. Bali is one of the most popular tourist destinations in the world and has become an icon of Indonesian tourism known for its natural beauty, cultural richness, and the friendliness of its people (Suniadewi, 2024). Even the Minister of Tourism and Creative Economy, Sandiaga Uno stated that Bali is a favorite tourist destination in Indonesia and the world (Hendriyani, 2024). Therefore, it is natural that Bali has a number of tourists that continues to increase every year (Putra, 2024). According to data from the Bali Satu Data page, tourist visits to Bali in 2023 amounted to 9,877,911 visits, an increase of 22.66% compared to 2022 of 8,052,974 visits. North Sumatra Province is one of the provinces in Western Indonesia that is rich in natural beauty and cultural heritage in Indonesia (Dinas Kebudayaan Pariwisata dan Ekonomi Kreatif Provinsi Sumatera Utara, 2024). A variety of amazing tourist destinations, North Sumatra offers an unforgettable vacation experience for visitors so that the interest in tourist visits continues to increase every year (Panggabean, 2023). Data of Badan Pusat Statistik shows that foreign tourist visits to North Sumatra in 2023 amounted to 197,015 visits, an increase of 164.46% compared to 2022 of 74,498 visits. The increase in the number of tourist visits in the two provinces will affect the increase in human activities as well (Made Rai Kristina et al., 2020). However, the increase in human activity in tourist destinations often leaves waste

generation However, the increase in human activity in tourist destinations often leaves waste generation (Nurifah & Nabiilah, 2022).

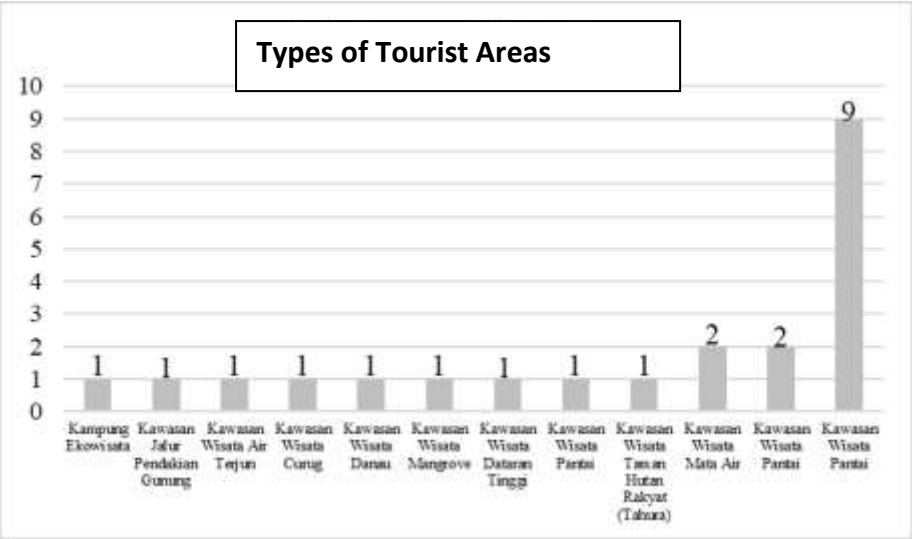

Figure 3. Types of Tourist Areas
(Source: Researcher Analysis Results)

Figure 3 shows the types of natural tourism areas studied in the reviewed scientific article. Data shows that the beach tourism area is the most studied area. Data from the Ministry of Maritime Affairs and Fisheries shows that Indonesia has 20.87 million ha of marine conservation areas, coasts, and small islands. It stretches 99,093 km of coastline with a sea area of 3.257 million km2 as home to more than 500 species of reef-forming corals and other potential marine biodiversity. This makes marine tourism including the beauty of the coast as one of (Source: Researcher Analysis Results) leading tourismFigure 3 shows the types of natural tourism areas studied in the reviewed scientific article. Data shows that the beach tourism area is the most studied area. Data from the Ministry of Maritime Affairs and Fisheries shows that Indonesia has 20.87 million ha of marine conservation areas, coasts, and small islands. It stretches 99,093 km of coastline with a sea area of 3.257 million km2 as home to more than 500 species of reef-forming corals and other potential marine biodiversity. This makes marine tourism including the beauty of the coast as one of Indonesia's leading tourism (Wahyuni, 2024). Now the trend of marine tourism is increasingly in demand by tourists. In 2021, it shows that 45% of foreign tourist visits to ecotourism while 35% of visits to marine tourism. This also happened to the interest of domestic tourists in marine tourism by 11.29% (Wahyuni, 2024). Based on survey data of Kementerian Pariwisata dan Ekonomi Kreatif (Kemenparekraf), Ministry Sandiaga Uno said that 761 respondents as of Tuesday (11/4/2023) showed the results of 64% of respondents choosing beach tourism (Simangunsong & Widyanti, 2023).

Marine tourism is in the top three favorite tourist destinations among domestic tourists, but its development should pay attention to environmental, economic, and socio-cultural ecological aspects (Wahyuni, 2024). The consequences if the ecological aspect of the environment are neglected, namely the generation of waste (Annisyah Siagian, 2022). The problem will be even more serious when the awareness of tourists to maintain cleanliness is also low (Megawana & Suryawan, 2019). The condition of beach tourist destinations scattered with garbage will reduce aesthetics and environmental pollution so as to reduce the positive image of the beach (Suidarma et al., 2022). Therefore, waste

management in natural tourism areas must be considered as an urgent environmental problem that needs to be considered.

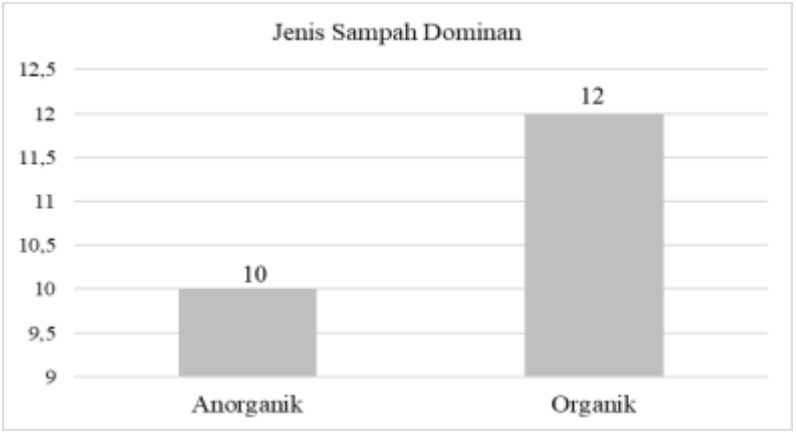

Figure 4. Dominant Type of Waste
Source: Researcher Analysis Results

Figure 4 shows the dominant type of waste in the area under study. The dominant waste that arises is organic waste. Waste generation in the area is in the form of organic and inorganic waste sourced from human activities in place and due to natural activities such as being carried away by water currents and wind (Widiyanto et al., 2023). The composition of waste generation that is produced is perishable waste, namely leaf waste, twigs, food scraps, and kitchen waste, while the composition of waste due to being carried away by water currents is dominated by waste that is difficult to rotThe composition of waste generation that is produced is perishable waste, namely leaf waste, twigs, food scraps, and kitchen waste, while the composition of waste due to being carried away by water currents is dominated by waste that is difficult to rot (Darwati, 2019). Inorganic waste that is often found in natural tourist destinations is in the form of plastic, glass, fabric, and even metal waste (Ellissi et al., 2022). The composition of plastic waste is most commonly found because many tourists bring food and drinks in single-use plastic wrappers The composition of plastic waste is most commonly found because many tourists bring food and drinks in Organic waste, although it is easy to decompose if there is no handling and management, will cause an unpleasant odor and interfere with human health plastic wrappers (Wahyudi et al., 2023). In fact, the nature of plastic is that it requires a long process and time to decompose (Sinaga et al., 2022).

Organic waste, although it is easy to decompose if there is no handling and management, will cause an unpleasant odor and interfere with human health (Gucialit & Lumajang, 2022). The percentage of inorganic waste is smaller, but this inorganic waste should not be ignored because inorganic waste has an attractive color for animals so that inorganic waste in the form of plastic can be eaten by animals (Sindi Febianti & Lely Syiddatul Akliyah, 2023). Through the webinar Plastic Waste Management in Efforts to Control Climate Change, the Ministry of Tourism and Creative Economy stated that the problem of natural tourism waste continues to be handled, both organic and plastic wasteThrough the webinar Plastic Waste Management in Efforts to Control Climate Change, the Ministry of Tourism and Creative Economy stated that the problem of natural tourism waste continues to be handled, both organic and plastic waste (Nurhaliza, 2022). This step is one of the responses regarding the urgency of waste management in tourist areas.

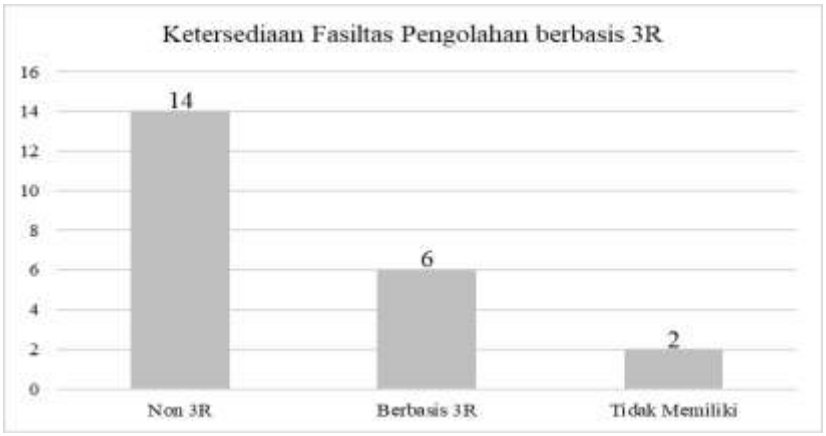

Figure 5. Availability of 3R-based Processing Facilities
(Source: Researcher Analysis Results)

Figure 5 shows the availability data of waste management facilities based on 3R (Reduce, Reuse, and Recycle). Data shows that 14 tourist attractions are not yet available with these facilities, and there are even two places that do not have waste management facilities. Then there are only 6 tourist attractions that have 3R-based waste management facilities, this shows that modern waste management has not reached all regions. Waste disposal in tourist destinations is still directly thrown into the environment without management, this will certainly endanger the balance of the ecosystemFigure 5 shows the availability data of waste management facilities based on 3R (Reduce, Reuse, and Recycle). Data shows that 14 tourist attractions are not yet available with these facilities, and there are even two places that do not have waste management facilities.

Then there are only 6 tourist attractions that have 3R-based waste management facilities, this shows that modern waste management has not reached all regions. Waste disposal in tourist destinations is still directly thrown into the environment without management, this will certainly endanger the balance of the ecosystem (Sinaga et al., 2022). The reality is that the act of burning garbage or directly throwing it into the river body is still found on the grounds of limited waste management facilities The reality is that the act of burning garbage or directly throwing it into the river body is still found on the grounds of limited waste management facilities (Ana et al., 2024)' (Wahyudi et al., 2023). We also often encounter the old paradigm of waste management, namely collecting, transporting, disposing, where the concept of waste management still rests on the government (Hesarika et al., 2022). There are facts in the field showing that waste generation in natural tourist destinations often experiences obstacles in transporting it to landfills due to difficult and long terrain (Ellissi et al., 2022). Therefore, in addition to reducing the intensity of conventional waste processing, TPS3R which is placed directly in natural tourism areas can be one of the solutions

Waste Management Strategies in Indonesia's Natural Tourism Areas

In carrying out waste management in tourist destination areas, a strategy is needed, especially if it must be implemented in Indonesia's natural tourism areas due to the diversity of landscape conditions. Natural tourism areas are also synonymous with protected areas that must be preserved. Good waste management must also start with good planning, because it can be the most suitable determinant of waste management to be applied in natural tourist areas according to its geographical character (Yuwono et al., 2019). Definition of waste management according to Definition of waste management

according to Undang-Undang Nomor 18 Tahun 2008 tentang Pengelolaan Sampah is systematic, comprehensive, and sustainable activities that include waste reduction and handling. The conventional waste management paradigm, namely collecting, transporting, and then directly disposing of it to the landfill, must be changed. Moreover, the handling of waste by burning must be stopped so that it is free of air pollution. On the other hand, waste management that is still resting at the city level allows organic and inorganic waste to still be mixed (Aziz, Dewilda, Khair, et al., 2020).

In accordance with the mandate of Undang-Undang Nomor 8 Tahun 2018 tentang Pengelolaan Sampah is waste reduction, tourism area managers are obliged to prevent and limit waste generation Waste reduction, tourism area managers are obliged to prevent and limit waste generation (Yuwono et al., 2019).

a. Prevention of Waste Generation

   Waste generation prevention activities can be in the form of installing signs containing an appeal not to litter. Furthermore, education is carried out to visitors and business actors in tourist areas with a social media approach. Socialization through waste management counseling at a meeting of business groups in tourist areas.

b. Restriction of Waste Generation

   Restrictions on visitors' luggage that causes waste can be done, but a clear Standard Operating Procedure (SOP) must be made. This activity has been carried out since entering the area by checking. Then the provision of garbage bags so that garbage is not thrown carelessly, after leaving the tourist area, a re-check is carried out on the generation of garbage brought by visitors.

The first step from the stage of simple waste management in tourist areas is waste sorting, at least divided into two, namely organic and non-organic. This activity can be carried out from the beginning by providing two different garbage cans in the tourist area, so that the waste has been sorted from the beginning. Then it was continued with collection activities carried out at temporary collection points. The simple thing that is done at the temporary collection point is that organic waste is processed simply for compost or handicrafts, while inorganic waste can be transported to the landfill (Rustiana et al., 2024).

Another strategy carried out is to apply the 3R concept (Reduce, Reuse, and Recycle), for example the Waste Bank. The Waste Bank is a community-based program or facility that aims to manage waste with the 3R principle (Reduce, Reuse, Recycle) at the local level (Plastic Smartcities WWF, 2024). The Waste Bank involves community participation around natural tourism areas. Waste banks can be held by non-governmental organizations in natural tourism areas. The process remains with waste sorting, then the waste bank will accept the waste that has been sorted and even the waste we bring can be exchanged for money. Waste that is usually accepted by waste banks is waste that has been sorted from households or businesses, especially recyclable waste such as plastic, paper, metal, and glass. The concept of the waste bank itself is not only to accommodate but also educate the public about the value of waste. For example, with creative education on processing inorganic waste into goods of economic value, so that waste processing activities can be carried out by the community starting from their respective homes or places of business. Based on data of Sistem Informasi Pengelolaan Sampah Nasional (2024), there are 726 Main Waste Banks in Indonesia.

The concept of TPS as a Temporary Disposal Site must now begin to shift to a Waste Processing Site, namely by applying the 3R concept to TPS. The TPS3R concept in tourist areas can prevent and limit waste generation, increase recycling, optimize waste utilization, and reduce waste piled up in TPA (Tempat Pembuangan Akhir) (Suryawan et al., 2021). TPS3R is also expected to restore waste management at the local level (Plastic Smartcities WWF, 2024). The existence of TPS3R is felt to be very beneficial for the community (Pemerintah Kota Tangerang, 2023). An example of organic waste processing at TPS3R is compost, where this compost fertilizer can later be used by TPS3R members. At this level, the use of technology has begun to be needed, for example with choppers, simple decomposition by maggots, biogas technology and even pyrolysis technology. Based on data of Sistem Informasi Pengelolaan Sampah Nasional (2024) there are 4,754 TPS3R in Indonesia. The existence of TPS3R must be maintained, facilitated, supported, and even added, including placement in natural tourism areas.

The existence of TPS3R and Waste Bank which involves the active participation of the community not only attracts existing environmental communities but also as a means of creating other local environmental communities. The next waste management strategy is to revive or form an environmentally conscious community. Based on Herdiansah (2021) the waste problem does not only lie in the object of the garbage pile but also lies in the perception of the community. In addition to being a means of education and approach to the community, this environmental community is an indicator that the waste management that is being pursued has received a positive response from the community. Even the environmental community often gives a direct example through the action of collecting garbage on mountain climbing trails, riverbanks, and beaches.

The development of natural tourism areas must be based on the principle of sustainable tourism, which seeks harmony in economic, social, cultural, and environmental aspects (Istima & Muhyidin, 2023). The environmental aspect in order to preserve nature is the development of ecotourism or ecotourism. The concept of ecotourism not only maximizes economic empowerment in natural tourism areas but also pays attention to nature conservation steps. If this ecotourism principle is applied, waste management will be one of the priorities, because it is one of the efforts to protect the environment. Ecotourism can also be a means of environmental conservation education, including waste management to the community. Ecotourism can act as an initial gateway in the context of reducing and limiting waste brought by tourists.

No less important is the role of policy makers. The role of policy makers is one of the foundations for the systematic and legally enforceable management of natural tourism waste. Except for financial support or facilities, waste management also needs to be based on law, for example the creation of regional regulations that are binding on all elements of society, including tourist area managers. For example, as of July 1, 2019, through the Governor of Bali Regulation Number 97 of 2018 concerning the Limitation of Single-Use Plastic Waste Generation, the Province of Bali has banned the use of single-use plastic bags, plastic straws, and plastic polystyrene (styrofoam).

Reporting from the page Diet Plastik Indonesia (2020) In 2020, Governor's Regulation Number 97 of 2018 concerning Restrictions on the Generation of Single-Use Plastic Waste succeeded in encouraging changes in household behavior in the form of reducing the consumption of plastic bags by 57%, straws by up to 70%, and styrofoam by 81%. This indicates that there is a role for government regulations on public awareness of waste reduction. The allocation of funds for the environment should also be prepared. Still in Bali,

which is visited by the most foreign tourists, there are Undang-Undang Nomor 15 Tahun 2023 tentang Provinsi Bali where the Province of Bali is given the authority to impose levies for foreign tourists in the context of protecting culture and the natural environment in Bali. According to the news of DetikBali (2024) that one of the functions of the levy is for waste management in Bali.

CONCLUSIONS

Sustainable tourism is tourism that is able to harmonize economic, social, cultural and environmental aspects. As the number of tourist destinations and visitors increases, waste management in natural tourism areas is also an urgency that must be considered in environmental aspects. Through a systemic waste management strategy, the waste problem will be handled. Waste management strategies that can be carried out are simple management, reduction and restriction activities by natural tourism area managers, 3R-based management such as waste banks and TPS3R, support from policy stakeholders in the form of providing binding facilities and regulations, and the development of ecotourism-based natural tourism areas.

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No.	Judul	Jurnal	e-ISSN	Sitasi
1	Pengelolaan Sampah di Kawasan Wisata Alam Purekmas Sesaot Kabupaten Lombok Barat	Jurnal Sylva Scienteae Vol. 07 No. 4	2622-8963	(Ana et al., 2024)
2	Pengelolaaan Lingkungan sebagai Upaya Mengurangi Sampah di Kawasan Pesisir Pantai	Nautical : Jurnal Ilmiah Multidisiplin Vol 1 No 7	2829-7466	(Annisyah Siagian, 2022)
3	Pengembangan Sistem Pengelolaan Sampah Kawasan Wisata Pantai Kota Pariaman dengan Pendekatan Reduce-Reuse-Recycle	Serambi Engineering, Volume V, No. 3	2541-1934	(Aziz, Dewilda, Khair, et al., 2020)
4	Kajian Awal Pengolahan Sampah Kawasan Wisata Pantai Carocok Kota Painan	Jurnal Sains dan Teknologi Vol. 20 No.1	2615-2827 5	(Aziz, Dewilda, & Putri, 2020)
5	Upaya Pengelolaan Sampah di Kawasan Pariwisata Air Terjun Dait dan Setegung	Reswara : Jurnal Pengabdian Kepada Masyarakat Vol. 3 No.2	2716-3997	(Ellissi et al., 2022)
6	Mengatasi Permasalahan Sampah di Lokasi Wisata Alam Gunung di Jawa Barat	Dharmakarya: Jurnal Aplikasi Ipteks untuk Masyarakat Vol. 10, No. 4	2614-2392	(Herdiansah, 2021)
7	Kajian Pengelolaan Sampah di Kawasan Wisata Tongging Kabupaten Karo Tahun 2022	Prepotif : Jurnal Kesehatan Masyarakat Vol. 6 No. 3	2774-5848	(Hesarika et al., 2022)
8	Pengelolaan Sampah sebagai Pengembangan Pariwisata Berkelanjutan di Kampung Ekowisata	JPMI : Jurnal Pemberdayaan Masyarakat Indonesia Vol. 5 No. 1	2721-2084	(Istima & Muhyidin, 2023)
9	Pengelolaan Timbulan Sampah Untuk Menjaga Citra Industri Pariwisata Pada Daya Tarik Wisata di Bali	Jurnal Ilmiah Pariwisata, Volume 25 No. 3	2599-0209	(Made Rai Kristina et al., 2020)
10	Pengelolaan Sampah Di Daya Tarik Wisata Pantai Candikusuma, Desa Candikusuma, Kecamatan Melaya, Kabupaten Jembrana	Jurnal Destinasi Pariwisata Vol. 7 No.2	2548-8937	(Megawana & Suryawan, 2019)
11	Pengelolaan Sampah di Desa Cileunyi Kulon, Desa Jati Endah, Objek Wisata Curug Layung Kabupaten Bandung dan Kabupaten Bandung Barat Provinsi Jawa Barat	MAHACITA : Jurnal Pencinta Alam dan Lingkungan Vol. 1 No. 1	2962-4754	(Nurifah & Nabiilah, 2022)

No.	Judul	Jurnal	e-ISSN	Sitasi
12	Strategi Pengelolaan Sampah di Kawasan Situ Bagendit Kabupaten Garut	Jurnal Pembangunan dan Kebijakan Publik Vol. 15 No.1	2614-2511	(Rustiana et al., 2024)
13	Konsep Penanggulangan Sampah di Wilayah Ekosistem Hutan Mangrove Belawan Sicanang dalam Upaya Pencegahan Pencemaran Lingkungan	J-CoSE: Journal of Community Service & Empowerment Vol.1 No.1	2985-4032	(Sinaga et al., 2022)
14	Kajian Pengelolaan Sampah di Kawasan Tahura Ir. H. Djuanda Berdasarkan Pedoman Pengelolaan Sampah Wisata Alam di Kawasan Hutan	Bandung Conference Series: Urban & Regional Planning Vol. 3 No. 2	2828-2124	(Sindi Febianti & Lely Syiddatul Akliyah, 2023)
15	Strategi Pengelolaan Sampah Pantai di Kabupaten Badung	Jurnal Bali Membangun Bali Vol.3 No. 4	2722-2462	(Sudiatmika, 2023)
16	Pengorganisasian dan Pengelolaan Sampah di Pantai Jimbaran	Berdikari: Jurnal Inovasi dan Penerapan Ipteks Vol. 10 No.2	2621-5896	(Suidarma et al., 2022)
17	Pengendalian Sampah Di Tukad Mati Melalui Pengelolaan Sampah Dari Hulunya Menuju Desa Wisata	Postgraduated Community Service Journal Vol.2 No.2	2776-8015	(Suryawan et al., 2021)
18	Perencanaan Pengelolaan Sampah di Jalur Pendakian Taman Nasional Gunung Rinjani	Jurnal Belantara [JBL] Vol. 2, No. 1	2614-3453	(Syaputra, 2019)
19	Perencanaan Pengelolaan Sampah di Objek Wisata Pulau Lemukutan Kabupaten Bengkayang	Jurnal Teknologi Lingkungan Lahan Basah Vol 11 No. 1	2622-2884	(Wahyudi et al., 2023)
20	Rekomendasi Pengelolaan Sampah Pada Ekowisata Mangrove Wonorejo Surabaya	Jurnal Kepariwisataan Vol. 22 No.1	2581-1053	(Rachmadiarazaq et al., 2023)
21	Pengelolaan Sampah Pantai Suwuk Kebumen Sebagai Upaya Mendukung Net Zero Emission	Prosiding Seminar Nasional dan Call for Papers ”Pengembangan Sumber Daya Perdesaan dan Kearifan Lokal Berkelanjutan XIII”	2985-9042	(Widiyanto et al., 2023)
22	Kajian Pengelolaan Sampah Berbasis Masyarakat di Desa Gucialit, Kecamatan Gucialit, Kabupaten Lumajang	MATRAPOLIS : Jurnal Perencanaan Wilayah dan Kota	2745-8520	(Gucialit & Lumajang, 2022)

Table 1. Scientific Articles
Source : Researcher Analysis Results