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The 9th International Conference on Marketing and Retailing**LOCAL WISDOM IN WASTE MANAGEMENT: PENGLIPURAN
TOURISM VILLAGE, BALI, INDONESIA "**

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Abstract

In March 2019, the foundation of destinations gave nomination to of three most cleanest villages in the world, they are known as Mawlynnong in India, Giethoorn in the Netherlands and also vallage of Penglipuran in Bali, Indonesia. Penglipuran, they become well-developed and established tourism destinantion villages, in range of 1500 tourists per day, with most of them are locals, and the rest are from abroad. The income of the village are used to get more visitors, it is also able to be waste, especially bottles of plastic. This research will analyze the waste management system of village through tourism village in goals of sustainable development. It focused on leveraging local wisdom in the system of waste management through enlisting the villagers participation, as like through household. The data taken by holding in-depth interviews, observation, and literature from previous research. The conclusions are explained, mantaining waste out is a responsibility of household. Bottles of plastic should be sold to collectors from the closest sub-district of women's organisation named family welfare empowerment (PKK) in a village. The treasurer keeps and uses for ritual, social, and religious purposes. Beside the amount of income, this method will help reducing levy of routine home ceremonial and maintain the village's clean, maintaining the reputation of the community to be a sustainable tourism place and one of the cleanest all over the world. It leads on how to understand the local wisdom' s value in managing the growing issue of waste in a tourism place or destination

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1. Introduction

One of the main forces behind Bali's macroeconomic growth is known as tourism industry's development, significant in many regencies throughout the Bali Province. Tourism is a productive sector and a network of interrelated business units which can foster economic growth. This has an impact on creating employment opportunities for local communities in tourism areas and expanding strategic business opportunities, which are provided in the form of accommodation facilities, restaurants, souvenir shops and transportation. Bali is one of the most well-known tourism destinations in the world. Bali is home to several cultural and natural attractions. Bali's natural and cultural diversity draws both domestic and international visitors, as known by the rise in the amount of foreign visitors to Bali each year.

The key draw for tourists and Bali's tourism potential are its rich cultural history, breath-taking natural scenery, natural forests, and historical heritage. In addition, tracking, rafting and caving tourism are tourist attractions which are in great demand by foreign and local tourists. The main draw for tourists to experience as part of Bali's ecotourism activities is a variety of flora and fauna, some of which are endangered species (Kanca, 2019). Penglipuran Tourism Village, located in Bangli Sub-district, Bangli Regency, was established as a tourism village in 1993 by Regent Decree No. 115, which was issued on April 29, 1993. This tourism village has its own uniqueness and still maintains its cultural heritage from its ancestors to this day. As of May 2019, there were 240 households and 1,026 people living in Penglipuran Village (Adi & Nyoman, 2017).

In early 2016, the green destinations foundation recognized Penglipuran Village together with two other villages, Giethoorn Village in the Netherlands and Mawlynnong Village in India, as the cleanest villages in the world. The Penglipuran traditional tourism village which is located in Penglipuran Banjar, Bangli Sub-District, Bangli Regency, has a deliberative tradition to make decisions for the common good and to work together to solve problems relating to the environment, society, and culture, as well as problems in relation to economy or community welfare. The community of Penglipuran Village earns a range of livings, such as farmers, bamboo craftsmen, construction workers, carpenters, traders, civil servants, entrepreneurs, and many others who work as foreign labourers.

Many people of Penglipuran Village also run home-based creative businesses, such as traditional bamboo handicrafts and the food and beverage sector, which includes Balinese herbal drink such as loloh cemcem, loloh kunyit (turmeric), and loloh teleng. In addition, the growth of the tourism industry in Bali, particularly in Penglipuran Village, has encouraged many people to work in the tourism industry by offering services like selling souvenirs, food, and beverage, or providing accommodation facilities. The entire community of Penglipuran Village practices Hinduism, and there is a platform for community forum called banjar adat which conducts a variety of religious, environmental, and social events. As a result, Penglipuran Village places a great priority on traditions, values of mutual cooperation, the kinship principle, and deliberation for consensus in their daily lives. Penglipuran Village firmly upholds Hinduism's teachings, that are founded on the idea of Tri Hita Karana harmony in daily life.

Tri Hita Karana can be reflected as three ways to attain both physical and mental well-being. These components of Tri Hita Karana are (a) Parhyangan, the harmonious relationship between people and also God the Almighty; (b) Pawongan, the harmonious interaction between people; and (c) Palemahan, the harmonious interaction of people and the universe/surrounding environment. The living

order of the Penglipuran Village community is regulated by awig-awig, or customary rules, in addition to Tri Hita Karana serving as its foundation (Pengelola Desa Wisata Penglipuran, 2016). Three essential aspects of what is usually referred to as sustainable tourism development must be put into practice in order to keep Penglipuran Village tourism destination developing sustainably so that future generations can enjoy it. The following are three factors which must be used in order to ensure proper tourism development sustainability:

- i. Create the best potential use or purpose of environmental kind of resources, which are essential to the tourism industry's development, by upholding important processes of ecology, contributing to the natural heritage and biodiversity preservation, and by processing community household waste independently and in accordance with SOPs (Standard Operating Procedures) stipulated by the relevant institution.
- ii. Respect the authenticity in sociocultural of the local community, help preserving the cultural heritage and traditional values of the people which have been built and lived, and promote tolerance and intercultural understanding.

Ensure effective long-term economic implementation, offer equitable advantages in socio economic for the entire stakeholders, including develop stable employment opportunities for the community and contribute to the reduction of poverty "(United Nations Environment Programme. Division of Technology, & Economics, 2005)".

The topic of sustainability cannot be separated from SDGs which is also referred to as the SDGs in which it is global action plans agreed by leaders of the world, as like Indonesia, with the major goals of eradicating poverty, minimizing inequality, and also protecting the environment. The SDGs contain 17 goals and 169 specific targets which are expected to be accomplished by 2030. Therefore, it is expected that the development of community's tourism can continue to improve by concentrating on environmental aspects as well as economic ones, as this is one of the objectives of sustainable development. Several facts were discovered regarding waste management which was directly handled by the Penglipuran community after conducting extensive research at Penglipuran Tourism Village.

In Penglipuran Village, waste generated by households has not been entirely managed correctly or in compliance with the SOP for independent waste management. The people of Penglipuran Village have been managing household waste, although they are currently simply sorting it into organic waste (wet waste) and inorganic waste (plastic waste). This culture of sorting waste has been carried out by their ancestors before. There is also a culture of cleaning the yard twice in a day, in the morning and the evening. Waste which has been sorted into organic and inorganic waste is stored in a separate place. Some people who own gardens or yards collect organic waste and then bring it there, piling it on the roots of each tree or plant as organic fertiliser. People who own pig and poultry farms feed their organic waste to the animals and those who do not own livestock or a garden send their organic waste to neighbours or relatives who own pig or poultry farms.

Regarding the inorganic waste or plastic waste sorting system, the plastic waste is brought to the meeting hall each month during PKK (Family Welfare Empowerment) activities which are directly coordinated by the chairwoman of the Penglipuran Village PKK. Plastic waste is collected once every month, in the middle of the month. After the monthly collection of all plastic waste at the meeting hall,

the plastic waste is weighed and sold to the garbage bank which has partnered with Penglipuran Village, specifically the garbage bank from Bangli Sub-district, which regularly comes to collect and purchase waste which has been sorted by the community. Plastic waste is purchased at a cost of Rp. 1000/kg while plastic bottles are purchased at a cost of Rp. 2000/kg. An average of 130 kg of trash is collected each month, and the proceeds from selling the waste are stored in PKK cash. The money is used for PKK activities and to purchase the ingredients needed to make snacks for joint traditional events.

Waste is defined by the World Health Organization (WHO) as products made by human activity which are discarded, disliked, or no longer needed. According to the great dictionary of Indonesian language (KBBI), waste is defined as objects which are discarded by their owners because they are no longer in use or cooled, such as leftover food, drink cans, leaves, plastic, and paper. According to Article 1 of the 2010 'Ministry of Home Affairs Regulation concerning Guidelines for Waste Management', waste is defined as "solid waste" which results from routine human activity and/or natural processes, such as household waste as well as waste from visitors to tourism destinations (Sutrisnawati & Purwahita, 2018). Waste management is the obligation of the government as a kind of public service, specifically in the establishment of waste management policies. Moreover, the community is also responsible for managing waste on a daily basis (Mulasari et al., 2016).

Waste management requires the participation of numerous cross-sectoral groups to distribute roles among each sector. The government which regulates waste management regulations prepares 3R infrastructure (Reduce, Reuse, and Recycle) in which it provides training to the community as the person in charge in their respective villages on how to properly and correctly process waste. Furthermore, the community can be claim as the main actor in processing waste independently. The following are factors which affect a tourism destination's sustainability as a result of waste accumulation or adverse effects on tourism destinations if garbage is not managed effectively and appropriately (Suprihatin et al., 1996):

- i. Influencing on health factors. Carelessly disposed of waste serves as a breeding ground and nest for numerous organisms, including bacteria, flies, cockroaches, and rats, which can spread diseases like diarrhoea, cholera, typhus, dengue fever, skin fungus, and other illnesses to the surrounding community.
- ii. Influencing on environmental factors. Carelessly disposing of waste can pollute the earth and water. The life of many different living organisms in rivers and oceans can be wiped out by waste deposited in drains and rivers which can also lead to water pollution. During the rainy season, waste buried in rivers can create floods. Furthermore, carelessly disposing of waste, particularly inorganic waste, can reduce soil fertility and pollute it. Waste is also suspected of being a factor in global warming because the methane (CH₄) and carbon dioxide (CO₂) gases which are produced during the collection and breakdown of waste can damage the earth's atmosphere.
- iii. Influencing social and economic factors. Dispersed waste diminishes the aesthetic value/beauty of a place. The smell it produces can make the surrounding community feel less comfortable and have an impact on their psychology as well as tourists visiting tourism destinations. Economically, improper waste management can result in unforeseen costs, such as an increased

public expenditure on medical care for those who contract illnesses brought on by dirty environments contaminated by bacteria and viruses in waste which is not properly managed.

Another positive impact of independent waste management in tourism destinations is that independent waste processing, including both organic and inorganic waste, can enhance the community's economy of tourism destinations by turning plastic waste into a variety of crafts which can be utilised as unique souvenirs from the Penglipuran Tourism Village and are sold at stands which sell souvenirs in front of people's houses. In addition, organic waste can be independently processed in any household using basic composter media manufactured from recycled materials like empty paint cans or unused buckets. This organic waste processing generates two types of fertiliser: solid organic fertiliser and liquid organic fertiliser, also known as LOF (Liquid Organic Fertilizer). These two fertilisers can be appropriately packaged and marketed to the community surrounding Penglipuran Village or to tourists. Both of these fertilisers can be utilised to improve the fertility of plants which are organic as well as plants which produce a variety of flowers.

Therefore, processing waste appropriately and efficiently may enhance the economy of community in a sustainable manner and provide job opportunities for the community by turning plastic waste into a product which is valuable. Independent waste management by the community is one way to address environmental problems brought on by waste accumulation. According to environmental health science, waste management is considered excellent if it is conducted in a way which prevents it from becoming a source of germs or a vector for the transmission of disease, and it is managed properly and systematically. Other requirements which must be met are not polluting the air, water and soil, not causing unpleasant odours (without reducing aesthetic value), not causing fires, and so on (Wardi, 2011).

In order to create Penglipuran Tourism Village a sustainable tourism village which future generations may enjoy, efforts are being made to raise awareness of environmental sustainability among the community of Penglipuran Village, one of which is by keeping the environment clean. Therefore, it is necessary to develop people's mindsets so that they are conscious of environmental cleanliness by educating people from generation to generation. In order to make visitors feel comfortable when visiting Penglipuran Tourism Village, it is also necessary to foster a sense of belonging to the community through fostering an understanding of the significance of environmental protection in all facets of life. Moreover, it is part of the endeavour to increase daily tourist visits to Penglipuran Village in order to encourage community economic growth and enhance the welfare of the populace.

Nevertheless, it is crucial for parties to work together or form a partnership in order to manage waste in a proper and sustainable manner for environmental cleanliness at the tourism destination of Penglipuran Village. This study discussed in considerable detail about the waste management practices employed by the community of Penglipuran Tourism Village, which has been recognized as top three cleanest villages known in the world. Penglipuran Tourism Village has put into practice one of the pillars of sustainable tourism development, namely by protecting the environment from generation to generation as a form of community involvement in developing the tourism industry to enhance people's welfare.

Based on the results of the studies above, the problem statements can be listed as follows:

- i. How do people of Penglipuran Tourism Village manage inorganic waste (plastic waste) from households and waste from tourists visiting Penglipuran Tourism Village?

- ii. How do people of Penglipuran Tourism Village manage organic waste (wet waste) from households of the Penglipuran Tourism Village?
- iii. Who are the actors involved in waste management in Penglipuran Tourism Village all this time?

This study aimed to examine and learn the procedure of waste management in Penglipuran Village of Tourism which is conducted by the local community and Penglipuran Tourism Village management all this time so that it received an award from the green destinations foundation as the third cleanest village. This study also investigated actors who have so far been involved in waste management in Penglipuran Tourism Village. In addition, the study identified how the methods used for managing organic and inorganic waste are conducted by the community so that it contributes to increasing tourists visiting Penglipuran Tourism Village every month and contributes to improving the economy of the Penglipuran Tourism Village community.

According to the United Nations Environment Programme. Division of Technology and Economics (2005), sustainable tourism development needs information from various kind of relevant stakeholders that becomes known as political leadership in order to help ensuring the extensive contribution and also building consensus. A sustainable process which involves continuous monitoring of the impacts which arise and the required preventative or system corrective actions is required to achieve sustainable tourism. Furthermore, it must keep a high level of satisfaction from the tourists, guarantee that tourists have a beneficial experience from their time spent at the chosen destination, raise tourists' issues of sustainability awareness, and promote tourism practices in sustainable way among tourists.

The main objective of sustainable development is to create equitable development for both the current and future youth generations. The goals of sustainable development are to raise people's welfare, provide basic needs, and fulfil human aspirations (Salim & Hudalah, 2020). According to the (Republik Indonesia, 2008), development (essentially more focused on the economic sector) can be evaluated for its sustainability using the following three criteria:

- i. There is neither natural resources waste nor depletion.
- ii. Free of pollution and other negative environmental impacts.
- iii. Activities which increase existing resources or other alternative resources (Arida & Sunarta, 2017).

In order to achieve sustainable development, it is ideal to apply sustainability principles to all facets of life, including the environmental, economic, sociocultural, political, and security and defence aspects. The pillars of economic sustainability, social and cultural sustainability, and ecological (environmental) sustainability must all be used in order to carry out sustainable goals of tourism development. The objective is to maintain sustainability for future generations while paying attention to sustainability for the current generation. These three pillars have their respective roles in sustainable tourism development, including:

Economic pillar. Sustainable development is closely related to economic growth and the methods used to foster both long-term economic development and the improvement of current generation welfare without sacrificing the sustainability of the environment, society, and the economy to enhance the welfare of future generations (see Figure 1).

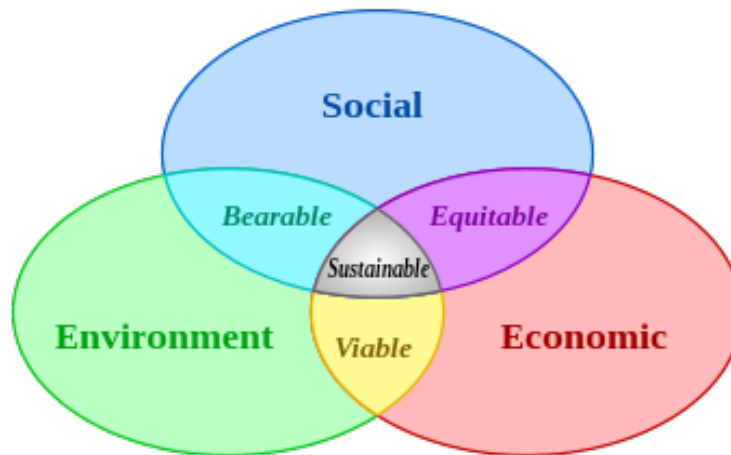


Figure 1. Economic, environmental, and social sustainability

The circles are intended to represent economic, environmental, and social sustainability as overlapping circles, with sustainability being the condition necessary for society to prosper. As a result, the economic cycle will continue without decreasing the level of welfare from generation to generation.

Social pillar is influenced by humans as community supporters in terms of interacting with each other in daily life. The main concern from the social aspect is population stability, meeting fundamental human needs, preserving cultural diversity, and local community participation in decision-making. In the social pillar there are two aspects to ensure social sustainability and listed as follows:

- i. Ensuring that the benefits and costs of development are properly distributed across all facets of community's life.
- ii. Value and respect human rights, including their social and political freedoms, as well as their economic, cultural, and security aspects.

Environmental Pillar is an environmental (ecological) aspect which is needed to support sustainable development. When discussing sustainable work plans, the ecological aspect is frequently stressed because it is closely related to the natural conditions of the earth where people currently reside. Thus, signs of environmental degradation can be easily observed and felt. The aspects which form the environment are as follows:

- i. Minimising the amount of waste and harm to the environment.
- ii. Increasing responsibility and care for the environment and natural resources.
- iii. Protect important/vital natural resources.

The goal of achieving sustainable tourism development in tourist areas is to keep all current features while ensuring that future generations can continue to benefit from the presence of a tourism destination.

2. Research Method

This research itself used a descriptive qualitative kind of approach. This study aimed to thoroughly explain by utilising available information about the phenomenon or circumstance of the case being studied. This was acquired through in-depth data collection at the research location, which is Penglipuran

Village, Bangli Sub-district, Bangli Regency. This method was used in this study to get insight into individuals' experiences regarding community-based waste management for the sustainable tourism development. This is consistent with (Babbie, 2020) which contended that qualitative research methodologies strive to provide qualitative data in which observations are theoretically richer and not readily reduced to numbers and seek to investigate deeper meanings from specific human experiences. The process of collecting. Data is using the secondary and also primary data.

The kind of secondary data is a form of documentation related to tourism development policies and programs implemented by the government of Bangli Regency. While the raw data were directly used to collect information on areas related to the development of community tourism which was conducted using semi-structured interviews. Survey respondents were conducted with 35 respondents from Penglipuran Traditional Tourism Village consisting of 15 ordinary people, 1 customary leader, 1 Pokdarwis (Tourism Awareness Group) leader, 1 environmental chairperson, 1 PKK chairwoman, 2 tourism village managers, 1 information section staff, 2 guides, 3 homestay owners, 4 cleaning staffs, 2 flower garden managers, and 2 bamboo forest managers.

Interviews were conducted with 35 respondents and in-depth discussions were also held with people who were considered knowledgeable and directly involved in waste management in daily life and also knowledgeable about tourism development in the Penglipuran Tourism Traditional Village area, Bangli.

This study aimed to identify various issues encountered in the community of Penglipuran Village in the management of organic and plastic waste as well as to inventory and describe the success of the culture of independent waste management by the Penglipuran Tourism Village community, which led to it being recognized by the green destinations foundation as the third cleanest village in the world after Germany and India.

3. Result and Discussion

According to the results of study in the field conducted in Penglipuran Tourism Village, the waste management procedure used by the people has not completely processed waste on its own. The people of Penglipuran Village have only completed the sorting of organic and inorganic waste as part of their waste management process thus far. Bamboo leaves from a 45-hectare bamboo garden in a popular tourism destination are collected daily and processed into organic waste which is utilised to make solid fertiliser. Bamboo leaves are collected daily by cleaning staff after being chopped and taken to nursery gardens and flower shops to be used as organic fertiliser. The fertiliser made from organic materials is used to grow flowers. The chopped bamboo leaves are then placed in sacks which each weigh 7 kg. Bamboo leaves can be utilised to make 300 sacks of organic fertiliser in just one week. Officers who look after and take care of flowers for sale generate organic fertilisers in the flower garden area.

Organic waste from households and community food stands have not yet undergone complete processing; it is now only in the waste sorting stage. Organic waste is provided to the livestock kept in every house and if a person does not have livestock at home, it is given to neighbours or family members who do. Some people use it as organic fertiliser for their plants in the garden. As a result, there are no

waste piles in Penglipuran. The community here tends to sort waste as part of a tradition which has been practised by earlier generations to protect the environment.

In the meantime, plastic waste is still in the sorting stage and has not yet been processed in relation to 3R (Reduce, Reuse, and Recycle). Every month, during PKK (Family Welfare Empowerment) activities directed by the chairwoman of the PKK (A.A.Ayu Pradnya Paramita), inorganic (plastic), waste is sorted and gathered in one location in each house before being taken to the meeting hall. The ancestors of the Penglipuran community maintained environmental preservation as a culture or tradition. The people of Penglipuran have it as a morning ritual to clean their yards and separate their household waste into organic and inorganic items.

Furthermore, the village apparatus has created village regulations (Awiq-Awiq) for the waste management in Penglipuran Village. This awiq-awiq was created in accordance with a community agreement for environmental sustainability. People who violate the rules by refusing to process their own waste in accordance with the agreement which has been established will be subject to social sanctions in which the sanctions have been decided upon together, such as not being served for population administration and not being permitted to participate in traditional and religious events together. Every restaurant and cafe in Penglipuran Village continues to serve customers with plastic straws and offer bottled beverages. This is one of the reasons why there is an increase in the amount of plastic waste generated by visitors. If this plastic waste is converted into a derivative product made from plastic waste, it will become a selling point for a product typical of Penglipuran Village and can be offered to tourists as unique souvenirs from Penglipuran Tourism Village.

The village community is the primary actor in protecting the environment for sustainable tourism village's development. The people of Penglipuran Village have continued a tradition started by their previous ancestors of conserving the environment. The community of Penglipuran Traditional Tourism Village has consistently preserved this culture up until the present, while other tourism villages very infrequently own it. The community of Penglipuran Traditional Tourism Village is a very valuable asset since they are highly conscious of the need to protect the environment in their daily lives. The people of Penglipuran Traditional Tourism Village can still sort their household waste independently despite the absence of 3R (Reduce, Reuse, and Recycle) waste processing facilities. Lack of waste processing facilities does not preclude innovating to process waste independently in order to protect the environment and keep it clean so that the next generation can enjoy it in a sustainable manner.

Long before Penglipuran Village was declared as a tourism village by the local government of Bangli, the people of Penglipuran Village have a tradition of independently processing waste. In addition, there is no notion of sustainable tourism development, one of whose pillars is environmental sustainability. Penglipuran Tourism Village is an example of a sustainable tourism village which has applied the three sustainability pillars, those are economic sustainability, social sustainability, and also environmental sustainability. The people of Penglipuran Village, who are highly conscious of the importance of maintaining a clean environment, are the main actors taken part in the waste management system. Moreover, the role of customary leaders is crucial in regulating all community activities and maintaining a clean environment. Furthermore, the managers of Penglipuran Tourism Village are also

involved in monitoring the performance of all staff members who are in charge of daily environment cleaning in accordance with established rules.

4. Conclusion

In the conclusion section, the writers will explain two results after outlining various discussions of this study. First from an anthropological perspective, Penglipuran Village stands out as a place which is deeply committed to the core values of authenticity (local customs) and ancestral heritage related to a belief system based on Hinduism. Therefore, every resident in Penglipuran village is required to follow every traditional rule which has been handed down through the preservation of the Penglipuran climate which has long been regarded as a lovely, cosy, and cool place. Apart from representing a lovely tourism destination, Penglipuran cleanliness also reflects mysticism which is represented through offerings made to Sang Hyang Widhi (The One Almighty God).

Second, the people of Penglipuran Tourism Village have a strong sense of collective responsibility for protecting the environment, so they can work together to keep the yards of their individual houses and public spaces clean without feeling compelled to do so. Penglipuran Tourism Village has applied the three sustainability pillars. As long as these three pillars are upheld, the current tourism industry can continue to develop sustainably and benefit future generations. The roles of traditional leaders and the community are crucial for establishing sustainability and protecting the environment. In Penglipuran Village of Tourism, the role of the community is crucial to the implementation of activities for sustainable tourism development.

5. Suggestion

According to the discussion and description of the waste management strategy in Penglipuran Tourism Village which includes members of the community, traditional leaders, and managers of Penglipuran Tourism Destinations, it is clear that the community plays a significant role in the process of sorting waste to maintain a clean environment. Based on the aforementioned study results, there are a number of recommendations which can be made for independent waste management in the future to preserve the sustainability of tourism destinations which have already developed and that the following generation can still enjoy.

- i. The processing of organic waste originating from households and community food stands can be processed by the people themselves in their own houses using composter media constructed from used buckets and using MOL (Local Microorganism) liquid as a liquid for decomposing waste. This liquid can be made from natural ingredients found in the neighbourhood.
- ii. Inorganic waste (waste of plastic) that has been already processed is able to be sold to the waste bank once it has been sorted. In addition, plastic waste can be converted into handmade products with a high economic value which can be sold to tourists as one of Penglipuran Tourism Village's premium products.
- iii. It is preferable to advise all restaurants and cafes in Penglipuran Tourism Village to stop providing plastic straws to customers who order drinks, stop selling plastic bottled beverages,

and only provide refillable beverages. In addition, visitors to Penglipuran Village are expected to bring their own drinking containers so they can refill them at the place provided, as this is one of the reasons why plastic waste tends to accumulate at tourism destinations.

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