

## The Analysis of Ecotourism Principle on Methods of Waste Disposal to Minimize Negative Impacts in Baluran National Park

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### Abstract

Ecotourism has been identified as a potential source of tourism development, particularly in conservation areas such as national parks. Ecotourism principles should be implemented in order to achieve the goals of sustainable tourism. One of the ecotourism principles for minimizing the negative impacts of tourism activities is waste disposal methods. Baluran National Park is a conservation site with the primary goal of preserving its ecosystem while also being accessible to tourists. As one of the potential ecotourism sites, the purpose of this study was to use qualitative research to investigate the practices of implementing ecotourism principles on waste disposal methods in order to reduce the negative impact caused by tourism activity in Baluran National Park. The observation will concentrate on how the six waste disposal methods (Ceballos-Lascurain, 1996) are implemented in the main tourist areas of Baluran National Park, which are Batangan, Bekol, and Bama. The results show that four waste disposal methods, namely reducing waste with non-toxic materials, reusing materials on-site or off-site recycling, efficient recycling by sorting materials, and material control, have not been implemented in Baluran National Park. Meanwhile, composting or anaerobically digesting biodegradable wastes and purchasing materials from local people are two methods that have been applied, but not thoroughly.

**Keywords:** *ecotourism, methods of waste disposal, national park, Baluran*

### 1. Background

Indonesia has huge potentials for its natural tourism and it is a favorite destination chosen by the tourists. However, tourism could cause environmental damage from the waste produced on-site. Therefore, there should be a way to avoid the possibility of environmental damage caused by tourism.

The Ecotourism Society stated a term of tourism with special interest purpose named ecotourism with the hope to help decrease the possibility of damage caused by tourism. Ecotourism is responsible travel to natural areas that conserves the environment and improve the well-being of local people (The Ecotourism Society,

1990 in Fandeli, 2000).

According to Goodwin, ecotourism is also low-impact nature tourism which contributes to the maintenance of species and habitats either directly through a contribution to conservation and/or indirectly by providing revenue to the local community that is sufficient for local people to value and, therefore, protects their wildlife heritage area as a source of income (Goodwin, 1996: 288 in Fennel, 2007).

According to the Ministerial Regulation of Home Affairs Number 33 in 2009 about the guidelines for ecotourism development chapter

1, ecotourism is a natural tourism activity in a responsible area by taking into account the elements of education, understanding, and support for natural resource conservation efforts, as well as increasing the income of local communities. With this regulation, the government of Indonesia hopes that ecotourism can be a solution to protect the environment in tourism destinations. Fandeli (2000), ecotourism (green tourism or alternative tourism) is travel that is oriented to the environment to link the aim of natural resources protection and tourism industry.

Baluran National Park located in Situbondo, East Java, is one of the sustainable tourism destinations according to the Ministry of Tourism and Creative Economy. Baluran National Park could be one of the destinations that apply the ecotourism term as its type of utilization to help balance between the conservation goals and tourism activities. Tourism caused a crucial problem in Baluran National Park because the visitors were unable to obey the rules to keep the tourist area clean.

This low percentage of tourist awareness caused the bad behavior of the visitors, such as littering, feeding animals, or even crossing the borders of the savanna which damages the ecosystem of the park. One of the principles of ecotourism is to minimize the negative impacts caused by tourism activities, therefore education for tourists should be implemented to preserve the environment.

As one of the five oldest national parks in Indonesia, Baluran National Park has a surface area of up to 25.000 hectares with unique and various vegetation and animal collections including the endangered species, Banteng (*Bos Javanicus*), which is also the icon of this national park. This park is also famous for its 10.000 hectares savanna in Bekol which people called "Little Africa in Java" and the beautiful sunrise in the eastern part of Java which could be seen at Bama Beach.

As a conservation site that obligated to preserve its ecosystem, Baluran National Park faced the dilemma that although the management tried to educate the tourist to preserve the ecosystem while also running the tourism activity, the implementation in real life was not easy.

## **2. Theoretical Framework**

There is a lot of tourism term, such as nature-based tourism, ecotourism, sustainable tourism, green tourism, responsible tourism, and others. Each of these terms has different meanings, which many of the tourists were not familiar or understand the goals of each term. This lack of understanding made the tourist careless of the environment at the tourist destination. Therefore some of the tourists still litter and are unable to obey the rules.

Ecotourism is defined as an environmentally responsible journey to a relatively undisturbed natural area to study, enjoy and appreciate nature or volunteering assistance that is concerned about the ecosystem of its area, promotes conservation, has low visitor impact, the people who live nearby, and their culture also provides for the beneficially active socio-economic involvement of local populations. It is envisioned as a tool for both conservation and sustainable development (Ceballos- Lascuráin, 1993a; Wallace and Pierce, 1996).

According to article 5 Act of Republic Indonesia Number 5 of 1990 about the conservation of natural resources and ecosystem, the conservation of the natural resource and its ecosystem is done by the act of life buffer system protection; biodiversity and its ecosystem preservation; and natural resource and its ecosystem utilization. As in Baluran National Park which is managed by the same concept as ecotourism principles, the park is open for tourism activities while also preserving the ecosystem and empowering local people living nearby.

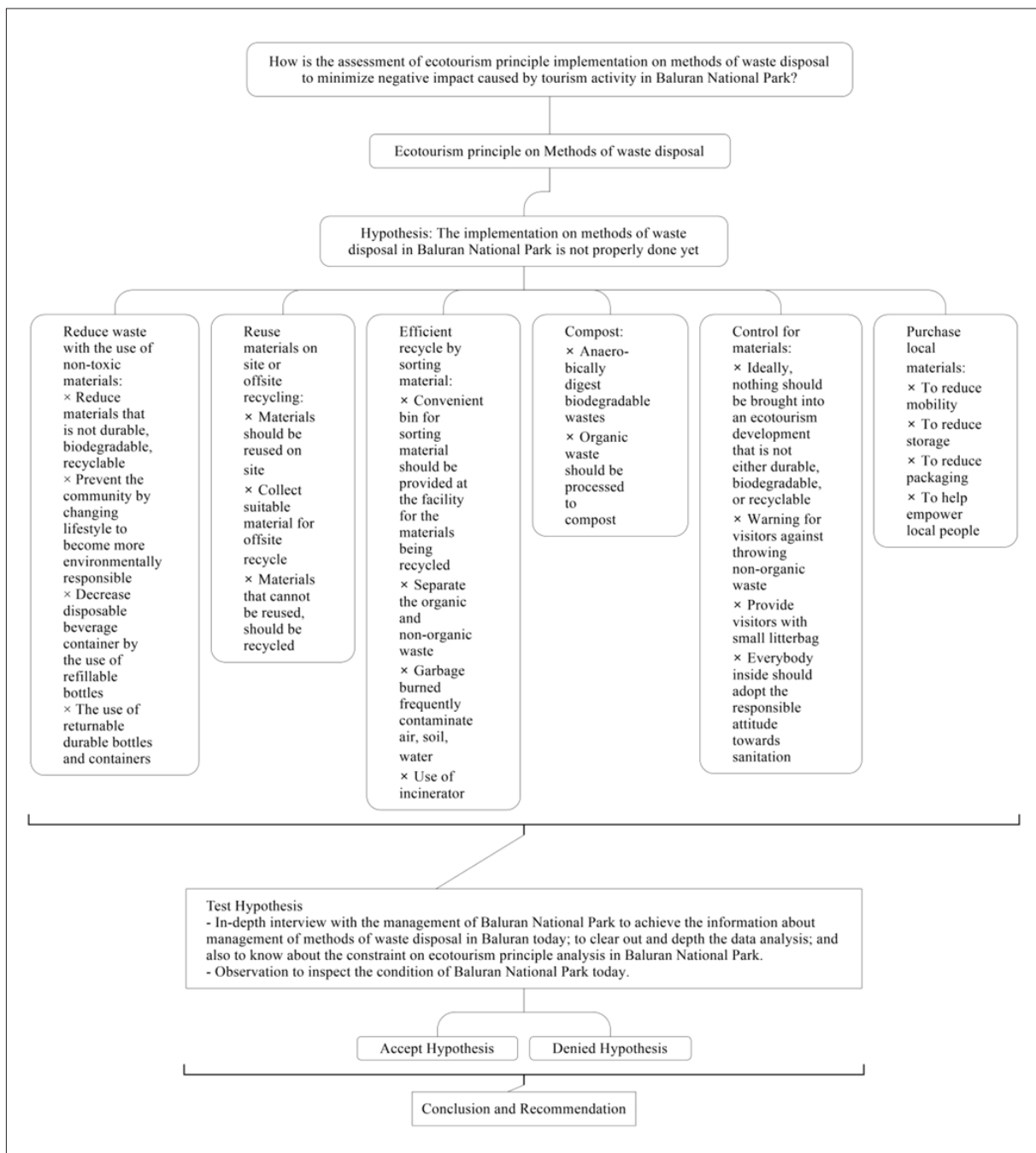
Wallace and Pierce (1996), also suggest that ecotourism addresses six key principles, which are: 1) a type of use that minimizes negative impacts to the environment and local people; 2) increases the awareness and understanding of an area's natural and cultural systems and the subsequent involvement of visitors in issues affecting those systems; 3) contributes to the conservation and management of legally protected and other natural areas; 4) maximizes the early and long-term participation of local people in the decision-making process that determines the kind and amount of tourism that should occur; 5) directs economy and other benefits to local people that complement rather than overwhelm or replace traditional practices (farming, fishing, and social systems); and 6) provides special

opportunities for local people and nature tourism employees to visit natural areas and learn more about the wonders that other visitors come to see.

Based on the principles above, the writer chooses a type of use that minimizes negative impacts to the environment as the focus. The tourism sector is regarded as giving negative impacts on

the environment. However, ecotourism is believed to help minimize negative impacts. To analyze the implementation of this principle, Wallace and Pierce (1996), give thirteen indicators: group size; mode of transport; equipment; methods of waste disposal; use of “leave no trace” procedures; type and amount of training given to guides; type of

Figure 1. Flow of Idea



information given visitors before and during field visits; level of cultural sensitivity of interpretive materials and activities pursued; resulting attitude of locals towards tourism; architectural style and types of building materials and decor; measures of biophysical change, such as site spreading, vegetative composition, erosion, water quality, wildlife behavior; and other site-specific measures.

Waste is still a problem for every tourism destination. Garbage in Baluran National Park is produced from natural conditions such as the garbage from the sea and tree leaves and domestic production such as the waste produced by the park rangers living inside the national park, the food seller, and the visitors' garbage.

In Baluran National Park, garbage is mostly produced by tourist visits. The waste coming from the tourist visits was mainly food wrappers, food leftovers, and plastics that are produced because the visitors mostly bring and eat the food they brought while they were traveling and enjoying their visits to the main destination area which are Bekol and Bama.

The impacts of waste in Baluran National Park were mostly to the ecosystem of the park itself such as the behavior of the monkeys which turned to be so aggressive after being fed by the tourist and they continue to look for food from the tourist by snatching the plastic bag carried by the visitors. Another big concern was the cigarette butt that could cause a fire in the wood of Baluran.

To explore the methods of waste disposal in Baluran National Park, the writer chooses the guidelines of waste prevention strategies by Ceballos-Lascurain (1996), and those are: 1) reduce waste with the use of non-toxic materials; 2) reuse materials on-site or offsite recycling; 3) Efficient recycle by sorting materials; 4) Compost; 5) Control for materials, and 6) Purchase materials from local people.

### **3. Research Method**

The analysis method used in this qualitative research is a deductive approach with descriptive-analytical to explore the practices of waste disposal based on elaborated principles in Baluran National Park. The analysis and qualitative data processing are done since the formulation of the problem formed,

before observation, during observation, and after observation (Nasution, 1988, in Sugiono, 2011: 333).

Before observation, the analysis is done through the secondary data to point out the research focus. The data analysis of observation is done during the observation take place and after the data collection is finished in a certain period. To explore the practices, the writer conducted in-depth interviews and observation.

In-depth interview with the management of Baluran National Park to achieve information about the management on methods of waste disposal in Baluran National Park; to clear out and depth the data analysis; and also to know about the constraint on ecotourism principle analysis in Baluran National Park. Observation is done to inspect the condition of Baluran National Park.

#### ***Primary Source***

The primary sources were obtained through in-depth interviews and observation on 23 March – 8 April 2016 and 15 – 22 August 2016.

The type of interview involved asking 18 respondents consisting of 4 canteen owners and 14 people from the management of Baluran National Park. The writer chose to interview the canteen owner because they were responsible for the waste especially the food waste and takeout wrappers and the management of Baluran National Park such as the park rangers, the head of the national park, and tourist managers were the informants that could provide the data to analyze ecotourism principles.

The questions were open-ended questions to analyze the ecotourism principle on methods of waste disposal in three locations in Baluran National Park which are Batangan, Bekol, and Bama.

The observation was conducted by observing the methods of waste disposal activities in Baluran National Park such as observing how the park rangers took care of the waste, how the waste was destroyed, how the management educate the tourists about the regulation on not to litter, and fed the animals, also how the tourist obey the rules in the park and the tourist violation. According to Spradly in Sugiono (2011), the object of research in qualitative research is the social situation which has three components such as place, actor, and activity.

### **Secondary Source**

The secondary data were obtained on 24 February – 22 August 2016 from literature reviews from books, past research, journals, governmental data from the Ministry of Environment and Forestry and the management of Baluran National Park, news written about ecotourism and National Park issues to help analyzing the ecotourism principles in Baluran National Park.

## **4. Research Findings and Discussion**

According to the article 1 paragraph 14, Act of Republic Indonesia Number 5 of 1990 about the conservation of natural resources and ecosystem, a national park is a natural conservation with an indigenous ecosystem which managed by the zoning system so it can be utilized for research, scientific study, education, cultural support, tourism, and recreation. As a conservation site, Baluran National Park has its goal to preserve the ecosystem while also being open to tourism activities.

Therefore, according to the act of Republic Indonesia Number 5 of 1990 about the conservation of natural resources and ecosystem, it stated that the purpose of a conservation site is similar to the ecotourism definition by Ceballos-Lascuráin, 1993a on Wallace and Pierce, 1996.

Waste is being a problem faced by tourism destinations, including conservation sites or ecotourism destinations. According to article 5, Act of Republic Indonesia Number 5 of 1990 about the conservation of natural resources and ecosystem, the conservation of the natural resource and its ecosystem is done by the act of life buffer system protection; biodiversity and its ecosystem preservation; and natural resource and its ecosystem utilization.

Therefore, waste is one of the responsibilities that should be well-maintained to make the ecosystem utilization get better. To find out the methods of waste disposal in ecotourism sites, Ceballos-Lascuráin (1996), mentioned six guidelines as waste prevention strategies, those are: 1) reduce waste with the use of non-toxic materials; 2) reuse materials on-site or off-site recycling; 3) Efficient recycle by sorting materials; 4) Compost; 5) Control for materials, and 6) Purchase materials from local people.

Waste in Baluran National Park is produced from natural conditions and domestic production. The natural condition waste was mostly the garbage from the sea, the fallen leaves, and the animal waste. On the other hand, domestic waste was produced from the park ranger living inside the national park, the food seller and the visitors' garbage. The waste was mostly food waste, wrappers like body wash packaging and food wrappers, plastic bottles, takeout wrappers like plastic and styrofoam that were produced mostly on the main tourist visits area: Batangan, Bekol, and Bama.

### **4.1 Reduce waste with the use of non-toxic materials**

The first guidelines told to reduce materials that are non-durable, non-biodegradable, and non-recyclable. It was also considered as the best way to prevent pollution by avoiding the use of non-toxic materials such as plastic and Styrofoam, because these materials are dangerous to the environment, especially when it is burned.

To avoid environmental harm caused by waste, it is best to encourage the community to change their lifestyle to be more environmentally responsible. Enforcement to stop using non-toxic materials should be widely encouraged. For example, rather than using a plastic cup to sell beverages, the seller should use glass, cups, or bottles that could be washed and reused. Moreover, the management could encourage the visitor to use their water bottle to purchase a beverage, perhaps by adding the refillable privilege for this action.

When this research is written, there was no specific regulation that forbade the use of non-toxic products such as plastic and Styrofoam in Baluran National Park. For economic and practical reasons, the management of Baluran National Park did not forbid the use of these non-durable, non-biodegradable, and non-recyclable materials. Therefore the food sellers in Batangan, Bekol, and Bama were still allowed to use plastic cups and Styrofoam for takeout, as long as they obey the rules to keep the environment around their shop clean and help the park rangers take care of the trash that produced from their sales.

It was not that the sellers never considered the idea of returnable bottles or glasses. They thought that it would be hard to control some customers that

might leave the cups anywhere because some of the customers still have no responsibility to return the bottles and some of them chose to take them away with them. The worst was that the glasses were taken away by the monkeys. Some of the dine-in utensils like spoons and forks were often disappeared and taken by the monkeys. These facts made the sellers prefer to use plastic cups and styrofoam that could be easily disposed of rather than using reusable materials. All the food sellers were aware that they had to maintain cleanliness around their stalls area, so they always collect all the used plastic cups and bottles to be brought outside and sold to the scavengers.

On the other hand, there was a seller in Bama Beach, Sri Sumiati, that prefer using lunch boxes for the guest staying overnight at Bama Beach. All the sellers in Bekol and Bama Beach closed their stall around 5 PM. Therefore if the guests want to buy dinner, they could order it before the stall closed. Sri Sumiati used the lunch box for this order because the guest always returned the box in the morning. This act was done because she was told by one of her customers that using Styrofoam is dangerous to human health and also to the environment. To fulfill her customer's demands, she chose to use food containers.

Sukadi, a seller at Batangan also tried to use only durable plates and cups that could reuse for a long time for her customers. Therefore she only provides dine-in, because she tried to avoid using plastic or Styrofoam for takeout. However, she still sold beverages in plastic bottles, but she always collects all the bottles to be sold to the scavengers.

There was no specific regulation that banned the use of non-durable, non-biodegradable, and non-recyclable materials like plastic and styrofoam.

The management claimed that there was no command from the government about it. Also, allowing the seller to sell plastic bottles could help them earn more income by selling the plastic materials to scavengers.

Although the food sellers in Batangan, Bekol, and Bama were still using plastic and styrofoam for selling, they promised to always keep the surroundings clean and help the park rangers collect the trash produced by their sales.

#### ***4.2 Reuse materials on site or offsite recycling***

The simplest thing to avoid waste is to reuse materials or recycle things. Therefore some of the materials that were found inside the national park should be selected for reuse or recycling. When this research is written, there was no specific order from the management of Baluran National Park about reusing the waste on-site or offsite recycling.

According to the park rangers, most of the waste produced on site was hard to be reused or recycled. For instance, the garbage from the sea was mostly damaged and the trash produced by tourist visits were mostly things that were hard to be reused like food waste and food wrappers. However, the park rangers would always try to reuse things like wood log or animal bones. They usually reuse wood logs as a natural fence or a board sign.

The food sellers on site were doing their part by collecting the used plastic materials to be sold to scavengers. Sometimes when the tourist visits were high and the amount of waste was increased, the scavengers themselves came on-site and collect the plastic materials.

Offsite recycling was quite hard to be done because it was hard to bring the waste offsite because of the long-distance and damaged roads reason, the distance from the main entrance to Bekol is 15 kilometers. Another reason for not stocking the garbage and waiting for it to be brought offsite is the monkey's attack. The mischievous monkeys on-site at Bekol and Bama understood how to open the garbage bins and they always tried to take out the garbage and play with it. Therefore, when this research was done, the most efficient way to dispose of the waste on-site was to burn them as soon as possible to avoid the monkey making a mess with the garbage.

#### ***4.3 Efficient recycling by sorting materials***

Efficient recycling requires the sorting of materials. The management did their part by providing different bins for organic waste, non-organic waste, and dangerous waste. They provided numerous garbage bins in Batangan, Bekol, and Bama, it was available almost on every corner to remind the visitors not to litter. However, most of the tourists were unhelpful so the garbage was not well separated. Moreover, the mischievous monkey always tried to take the trash out of the bins and

make a mess. Therefore the park rangers chose to burn the waste as soon as possible, although garbage burned frequently contaminates air, soil, and water. The impact of burning waste could be reduced by using incinerators which are considered to have a better impact than burning the waste on the ground.

At the beginning of 2016, Copenhagen Zoo, the joint partner of Baluran National Park for research and preservation, provided a special garbage bin that is monkey-proof modeled to overcome the problem of monkey's behavior in Baluran National Park. The first model was failed in a month because the monkeys were able to discover how to damage the bins. The next model with tighter closed bins was a success after more than two months of monitoring, so after the funding is settled from Copenhagen Zoo, they will be making more organic and non-organic bins.

As the research was done, the method of waste disposal in Baluran National Park was garbage burned. Burning is chosen because there was no final dumpster available outside the park and the cost of carrying the waste from Bekol to Batangan which is about 15 kilometers long with the damaged road is too expensive and difficult, so the easiest and faster way to get rid of the waste is to burn them. It is also chosen because of the monkeys' behavior problem.

After collecting all the waste, the park rangers will immediately burn them and wait for all the waste scorched, so there was no time for the monkeys to make a mess on them. The park rangers tried to separate the bottles, cans, shards, and other waste that cannot be burned, but most of the time to be efficient, they burned all the garbage together.

The smoke from garbage itself was considered small rather than the smoke from a wildfire, which always happens every year in the Baluran forest, that could last more than a week. The soil from garbage burning could regenerate easily because the vegetation in the Baluran forest was naturally good. The park rangers also move the burned area every day, so it was not in the same place and it could regenerate faster.

Copenhagen Zoo tried to help make the incinerator for waste disposal. The incinerator is made based on the ceramic system which the heat system process will be 400-600°C so that all the waste will become white ash that contains carbon

with fewer pollutants. The white ash itself could be used as compost for the plant so it is more eco-friendly. For now, the prototype was built in Batangan that is used well. Later, the incinerator will also build in Bekol and Bama, however as this research is done, the management of Baluran National Park and Copenhagen Zoo was still designing the suitable model to be built in the field because it should be bigger and monkey-proof, so it could fit bigger waste especially all the sea garbage

#### **4.4 Compost**

Organic waste is anaerobically digested biodegradable wastes. Organic waste can be useful for the park itself as compost. This waste came from animals' waste, human waste, dried leaves, and food leftovers. It will be processed naturally and turned into compost for the forest.

As this research was done, the management of Baluran National Park made an experiment of biopore-holes. They started planting 300 holes, which were spread in Batangan in June 2016 and will be harvested at the end of the next rainy season around March 2017. Those holes were filled with dried leaves from the Baluran forest in Batangan area. Since this experiment in Batangan has recently begun, the result cannot be seen yet, but if this experiment is successful, the management would add more and even invite local people to participate.

In Bekol, the compost was made by Banteng dirt in the breeding cage. Every day, the park ranger will clean up the Banteng dirt and threw them out near the cage as natural compost for the forest. In Baluran National Park, all of the animals' dirt become the natural compost for the forest itself.

#### **4.5. Control for materials**

Ideally, nothing should be brought into an ecotourism development that is either durable, biodegradable, or recyclable. As regards non-organic waste, it is important to warn the tourists against throwing away film and cigarette wrappings, beer cans, plastic cups, and other containers, because those materials are non-biodegradable and difficult to be recycled.

The management claimed that there was no base of law regulation for visitors' goods inspection from the government, so they did not inspect visitors' belonging before entering the site. The

regulation about goods not to be brought was only related to weapons. However, there was a regulation about no littering on site. The management also thought that it was hard to control the goods brought by visitors, so almost every goods and material were possibly brought inside. However, the park rangers will always keep an eye on visitors and their belongings.

One of the highest waste came from the tourist visits. Therefore to reduce the waste it needs cooperation between the management of the park and visitors. The management of Baluran National Park has already given efforts through verbal warnings and written regulations, but without tourists' support, it will not be a success.

The park rangers always tried hard to remind visitors to obey the regulations on-site, especially not to litter and feed wild animals. Feeding wild animals like the monkeys will change their behavior including stealing foods from visitors or waste from the garbage bin. It begins when the visitors come and purchase the entrance ticket at Batangan, also when the tourists came to the main destinations at Bekol and Bama. All the park rangers tried hard to inform and educate the visitors to not litter. However, some visitors find it hard to obey the regulations. Sometimes the violators even argue with the park rangers about the trash. Therefore, enforcement was practically needed for visitors to obey all the rules.

The written regulations were available on regulation signs in Batangan, Bekol, and Bama. However, the signs were hard to be seen by visitors because of the small font and unattractive signs. Visitors rarely notice the signs and even read them. Therefore, they generally ignore them. The regulation for not littering around was also written behind the entrance ticket. On every chance, the park rangers always tried to remind the visitors to read and obey the regulations.

There was a choice to provide visitors with small litter bags to decrease the possibility of them littering around. It would also help to bring all the waste offsite. To help the writer understand better if this regulation could be applied in Baluran National Park or not, she made an experiment. On 20-21 August 2016, the writer distributed 100 pairs of small litter bags (green bag for organic waste and a red bag for non-organic waste) to 100 units of

transportation (39 cars and 61 motorcycles) at the entrance as the visitors purchase the ticket. The writer used this chance to educate the visitors to not litter and use the litter bag instead. The result would be seen from the amount of returned litter bag when the visitor exit the park.

**Table 1. Result of Litter bags distribution experiment**

Litterbags	Amount
<b>Litterbags returned</b>	<b>10 bags</b>
Empty	4 bags
Filled and suitable	4 bags
Filled but not suitable	2 bags
<b>Litterbags unreturned</b>	<b>190 bags</b>
Litterbags vanished	181 bags
Found in Batangan	2 bags damaged, 1 bag undamaged
Found in Bekol	3 bags damaged, 2 bag undamaged
Found in Bama	1 bag damaged
<b>TOTAL</b>	<b>200 bags</b>

Source: Sekarningrum (2016)

Based on the result, it could be proven that the regulation was not suitable for Baluran National Park at that time. However some visitors obeyed the rule and returned the litter bag, the others chose to bring the litter bag with them. Therefore, educating and enforcing regulations could bring the better condition to the visitors entering the site.

As the research was done, there was no penalty for violators. Giving penalties in the form of fine was difficult to be done, because there was no regulation about it. The management of Baluran National Park was also forbidden to make a new system of penalties without permission from the government. Furthermore, it can even cause a complex case because fine is related to money, which was a very sensitive issue. The management could only depend on enforcing and educating the regulation to visitors in order to discipline the visitors and decrease the number of violators.

#### 4.6 Purchase local material

Purchasing materials from local people is meant to reduce mobility, reduce storage, reduce packaging



wrappers, and empower local people.

The management of Baluran National Park tried to involve the local people in most of the activities that they held. For instance, to provide meals for events held by the park, they would order the meals from the locals of Wonorejo Village, the village located next to Baluran National Park. It was meant to decrease mobility and also empower local people.

The impact of empowering local people is to maintain a good relationship between the park and local people. The act of the park trying to help the locals will increase the locals' responsibility and their sense of belonging to the national park, for instance by maintaining the cleanliness of the environment.

To reduce mobility, the management purchased materials at the nearest market, Galekan Market, which is approximately five kilometers from the park. For example, when there was a broken facility and they need to purchase materials, they prefer Galekan Market rather than going to Banyuwangi which distance 32 kilometers from Baluran. The food stall sellers in Batangan, Bekol, and Bama, also purchase their groceries at Galekan Market because it is near their houses. These activities were also a good chance to increase the local economy and avoid economic leakage.

## **5. Conclusion**

The main goal of a national park is to preserve the ecosystem while allowing tourism activities on site. This purpose is similar to the concept of ecotourism, therefore Baluran National Park could be considered as a potential ecotourism site. However, tourism activities could cause a negative impact due to the waste production that is not well controlled.

One of the waste production in Baluran National Park was caused by tourist visits. The problems caused by the tourist was due to the number of tourists that still littering and careless on distinguishing organic and inorganic waste causing the park rangers' job more difficult to dispose of the waste. This problem initiated the purpose of the research which was to explore the practices on methods of waste disposal in Baluran National Park with the six guidelines as waste prevention

strategies mentioned by Ceballos-Lascurain (1996), those are: 1) reduce waste with the use of non-toxic materials; 2) reuse materials on-site or offsite recycling; 3) efficient recycle by sorting materials; 4) compost; 5) control for materials, and 6) purchase materials from local people.

The first point about reducing waste by forbidding the toxic materials and the fifth point about control for materials were not yet applied in Baluran National Park, mainly because there was no specific regulation about forbidding materials like plastic and styrofoam, so this to non-durable, non-biodegradable, and non-recyclable materials was still used on site. The highest usage of plastic and styrofoam materials was made by the food seller because of the economical and practical reasons. Nonetheless, the food seller promised to always keep the environment around their stall clean and to help the park rangers clean the surroundings every day after-sales. Also, the park management could not control the materials that could be brought inside because of the same reason. Therefore the tourists could bring anything inside, besides a weapon. To overcome this issue, the park management really counted on the tourist's awareness in order to control the amount of waste on-site. The park rangers always tried to warn and educate the tourists about keeping the environment clean, also to separate organic and inorganic waste. However, there were still so many tourists who violated this regulation, although the key to success to controlling the amount of waste at Bekol and Bama was counting on tourists' awareness.

The second point about reuse materials and the third point about recycling by sorting materials were not yet applied in Baluran National Park, mainly because it was still quite difficult to do, for instance, the tourist who still unable to separate the organic and inorganic waste properly although the management already provided garbage bin on every corner at Bekol and Bama. This fact made it the park rangers hard to sort the materials. Moreover, the problem with the mischievous monkeys that always tried to break down the trash bins. For these problems, the Copenhagen Zoo will help make a monkey-proof garbage bin.

Although for the time being, the most efficient way to handle the waste was to burn it, so it would dispose immediately to avoid the monkeys'

attack. The choice to stock up the waste and wait for it to be brought offsite was not efficient because it would be easier and faster to burn the waste on-site because the daily amount was not that much so the effects to the environment were not that big. Every time the park rangers took care of the waste, they would try to sort the waste, if there were some materials to be sorted like plastic bottles or cans it would be sorted and given to the scavengers. The food seller also helps the park rangers to do this activity every day. As for the garbage burned, the Copenhagen Zoo will help build an incinerator for waste disposal which was more eco-friendly. When sorting the materials, the park rangers always tried to reuse materials like wood log or animal bones to make a natural decoration like a natural fence or board or photo decoration.

The fourth point about composting and the sixth point about purchasing the materials from locals were the only guidelines that were attempted to be pursued in Baluran National Park, though they were not implemented properly.

Organic waste like animals waste was always used as natural compost for the forest of Baluran, for instance, the dirt from Banteng in captivity was always thrown away to the forest near the cage as natural compost. In June 2016, the management made an experiment of biopore-holes by planting 300 holes, which were spread in Batangan and will be harvested at the end of the next rainy season around March 2017.

The management of Baluran National Park always tried to include local people living side by side the national park at every event that the park held. Therefore the park always tried to purchase things locally to reduce mobility, reduce storage, reduce packaging wrappers, empower local people and increase the local economy.

In conclusion, although there were only two out of six principles on methods of waste disposal that was applied in Baluran National Park, the management of the park and the park rangers always tried their best to take care of the waste problem in order to preserve the environment and decrease the possible impacts from the waste to the site, whether the waste was caused by the natural case or tourist visits.

The writer would like to suggest future research to see the current condition in Baluran

National Park on how they handle the method of waste disposal, for instance observing the current regulation related to waste disposal method, the usage of toxic materials like plastic and Styrofoam, the behavior of tourist on obeying the rules to not litter, the developments regarding the monkey-proof garbage bins and incinerator from Copenhagen Zoo, and also the progress of the biopore-holes. Future research could also explore if the ecotourism principles have been applied in Baluran National Park and how it benefits the park in terms of preservation and tourism activities.

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