

## Community in Disaster Prone Area III of Mount Merapi Yogyakarta, Indonesia: Surviving Through Disaster Tourism

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**Abstract:** Natural disaster may put people at the risk of suffering from considerable material losses. As a natural disaster-prone country, the people of Indonesia are very vulnerable to natural disaster. Therefore, the society's resilience and capacity improvement in facing natural disasters are very important. This article tries to explore a community in Disaster Prone Area III at Mount Merapi, Yogyakarta, Indonesia. Mount Merapi Eruption 2010 community victims who live in the Disaster Prone Area III are the study case object. This article found that the community in Disaster Prone Area III has been trying to survive in the disaster prone area by establishing a disaster tourism spot, namely Lava Tour. They have been taking advantage of the disaster into a tourism spot as the effort to survive, as well as conducting independent reconstruction and rehabilitation from the Mount Merapi Eruption 2010. Although there are many challenges, such as tourism safety level and the lack of tourism professionals, the Lava Tour still remains developing.

**Key words:** Mount Merapi • Tourism Community • Lava Tour • Disaster Resilience • Disaster Tourism • Yogyakarta • Indonesia

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### INTRODUCTION

Disaster tourism is a concept of tourism which takes advantage of post-disaster artifacts as the tourism attractiveness. Disaster tourism was born from several concepts which explain about tourism and disaster. Tour refers to an outdoor recreation that is done to self-refresh from routine activities or to look for a new atmosphere [1]. This general definition is what makes the disaster tourism keep becoming a topic of debate and controversy. The debate is mostly dominated by the appropriateness of disaster as a tour choice for leisure.

Disaster tourism is basically a medium to understand how the impact of a natural disaster is through a tour [2]. A study conducted by Potts shows that the people's

purpose from being interested in the disaster tour is basically interested only in the destruction, not the intention to help [2]. This disaster tourism phenomenon is quite inevitable since the people are influenced by the mass media or the government officials who conducted "tour" at the disaster areas [3].

How could a disaster tour become an attraction? According to Miller, there is a high emotional impact when people visit disaster sites. People are interested to visit because of the "high emotional impact" [2]. When Hurricane Katrina happened in 2005 in the New Orleans, USA, the victim people provided something unique that is intended to show how hard life has become after Hurricane Katrina hit them [2]. Besides, the tourists can also enter the people's houses to feel deeper emotional

experience. Disaster tourism can create empathy and establish solidarity [4]. Therefore, a disaster indirectly becomes a tourism attraction which makes the people feel higher and deeper emotional and empathy feeling rather than from watching the television or in the museum.

Resilience is a part of disaster study. Resilience toward disaster is the capacity of the people to survive in Disaster Prone Area with alertness. The word “resilience” comes from the word “rebound”, Tiwari [5] mentioned it as “bouncing back” since it comes from Latin “*resiliere*” which means bouncing back. According Holding (1973) the definition of ecosystem resilience refers to the ecosystem capability to adapt to changes and to keep surviving [5]. Walker explained that resilience is the system capacity to absorb disturbance and to reorganize, while conducting changes and basically maintaining the function, structure, identity and feedback for recovery purpose [6].

The location of the research was at Disaster Prone Area III Mount Merapi in Indonesia. Disaster Prone Area III is an area which is often inflicted by the heat clouds, lava flow, rock fall and poisonous gas. This type of area is only given to a very active volcano. No single residence or activity is allowed in the area [7]. Disaster Prone Area III Mount Merapi on the 2010 eruption history map was made by the Center for Research and Geological Disaster Technology Development (further herein mentioned as BPPTKG), a governmental body in Indonesia for disaster and geological research. The map was made in accordance to the result of observation toward locations which are considered as the Disaster Prone Area (Fig. 2 and 3).

Mount Merapi is the most active volcano on the island of Java, Indonesia. It is located on the border of 4 districts: Magelang, Boyolali and Klaten in the Central Java province and Sleman Regency in Yogyakarta province. According to *Atlas Tropische van Nederland* in 1938, Mount Merapi lies in the geographical position of 7° 32.5 'South Latitude and 110° 26.5' East Longitude. The height of Mount Merapi is 2914 meters above sea level [8]. Like other volcanic mountains, Merapi eruptions occur because of the crater blockage by the lava dome which then results in effusive eruption. The nature of this lava is so thick that it can clog the crater's hole. There are 4 types of Merapi eruption [9]; *First*, type A, where the magma rises through the ventilation pipe (vent) and breaks the old dome and forms a new dome. In this phase, there are small, harmless eruptions that produce hot clouds. *Second* is Type B, where the magma that rises through the pipe cave (vent) breaks the crater cover and destroys some of the peak of the volcano. The lava that comes out then forms a dome or “tongue” that pushes through the lava with high viscosity. *Third* is Type C, where the rising magma carries a high gas content so the resulting eruption contains gas but doesn't form a lava flow. The eruptions usually occur in a short time. *Fourth* is Type D, which is a very dangerous type of eruption because it produces a lot of hot clouds without lava flows and destroys the peak of Merapi. It is normally marked by the formation of caldera.

Famous for its forests, farms and agriculture, the area of Mount Merapi is also known as a tourist area. The most popular attraction is the Kaliurang Tour. The Kaliurang area is located about 28 kilometers to the

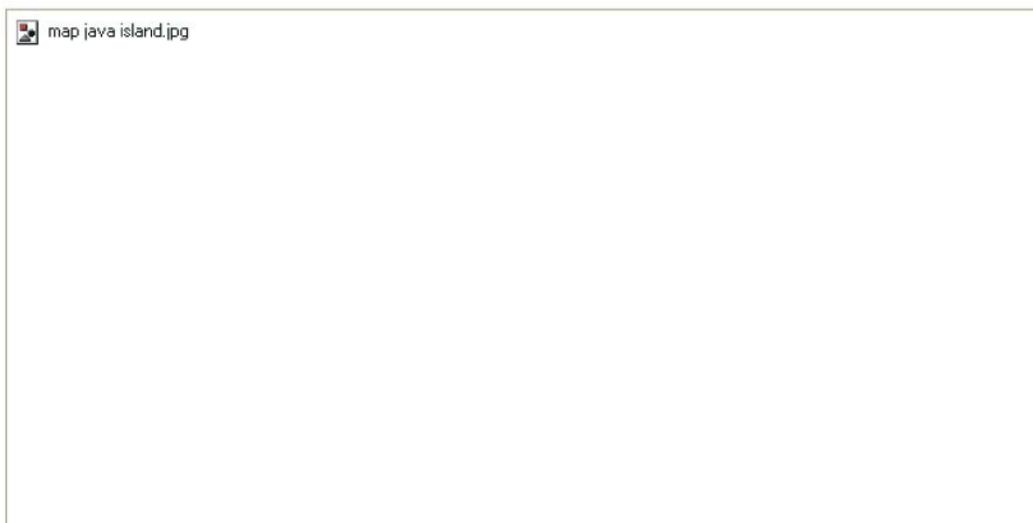


Fig. 1: Location of Mont Merapi in Java island Indonesia.

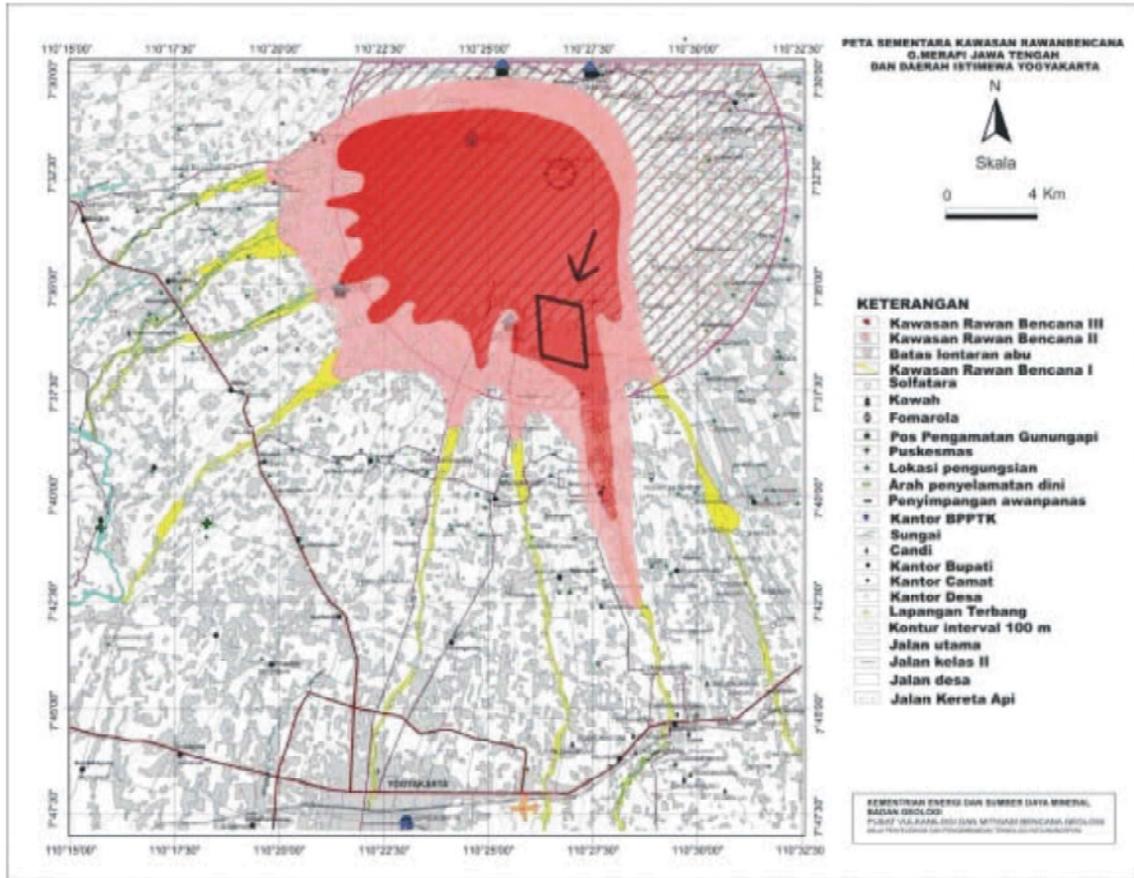


Fig. 2: The History Map of Mount Merapi Eruption 2010, made by BPPTKG, a governmental body in Indonesia for disaster and geological research. Black arrow and box are the surviving tourism areas and communities in the Disaster Prone Area III, which were also the research location



Fig. 3: The specific map of zona research

north from the center of Yogyakarta City in the Yogyakarta Province, with an altitude of 900 meters above sea level. In the 1930s, when Mount Merapi rarely showed its eruption activities, the local government began the development of Kaliurang as a tourist area. The start of Mount Merapi tourism cannot be separated from the role of the Dutch geologists in the 19th century who made the region of Kaliurang their vacation homes and recreational spots. Amazed by the cool weather and beautiful sceneries, the Dutch then built villas in the area [10]. In addition to being known as a recreational area full of villas, Kaliurang is also perfect for camping and trekking. It has campgrounds complete with hiking paths and beautiful forests [11]. But Kaliurang is not the only tourist destination in Merapi. In the east of the town there are Bebeng, Kopeng, Kaliadem and several golf courses which are bounded by Kali Kuning (Yellow River).

Before Merapi eruption in 2006, the tourist area in the east of Kaliurang was a favorite place for camping and trekking into the forest at Mount Merapi. The area was the entrance to climb Mount Merapi from the south. Many of the tourist spots in the east of Kaliurang are located in Cangkringan, a district that consists of villages such as Glagaharjo, Kepuharjo, Umbulharjo and Wukirsari. The tourism potentials in Cangkringan are ecotourism which is oriented to Mount Merapi's activities and ecosystem [12]. But after the 2006 and 2010 eruptions, the Kaliadem tourism was put to an end. Especially during the 2010 eruption, some parts of Glagaharjo Village, Umburharjo Village and Kepuharjo Village were destroyed by the eruption materials. After that, emerged a tourist attraction called *Lava Tour*, a type of tour that relies on Mount Merapi eruption as part of the highlights. The tour package includes the areas affected by the Merapi eruption, such as Kaliadem Bunker, Petilasan Mbah Marijan, Museum of "Sisa Hartaku," Alien Stone and an off-road tour around the Disaster Prone Area III and Kali Kuning. According Subagyo, the head of Pangukrejo sub-village, *Lava Tour* emerged after the eruption of Mount Merapi in 2006 but did not instantly gain popularity. The highlight of *Lava Tour* at that time was the Kaliadem bunker, which was built to provide protection from the threat of Merapi eruption. Unfortunately during the 2006 eruption, the bunker killed two volunteers from the Indonesian SAR team. In 2010, *Lava Tour* grew bigger; they started to use motocross bikes and Land Cruisers or SUV as part of their tours. According to the 2010 historical map released by the

Indonesian Geological Disaster Research and Development Center (BPPTKG), the Indonesian government's agency for disaster and geological research, the *Lava Tour* covers the Disaster Prone Area III of Mount Merapi.

This article explores the Lava Tour disaster tour as part of the ways the victim communities survive and adapt in disaster-prone areas. This research is limited to Umbulharjo Village, although the Disaster Prone Area III covers many areas including Glagaharjo Village, Kepuharjo Village and Wukirsari Village. Umbulharjo was one of the villages that belonged to Disaster Prone Area III of Mount Merapi eruption in 2010. It has become the most visited village by Lava Tour tourists as it is the entrance to Lava Tour, Bebeng, Kaliadem and Kopeng, whose management is under the Tourism Office of Sleman Regency, Yogyakarta.

The *Jeeps* - the term used by the Indonesian people to call Land Cruisers or SUVs - for Lava Tour transportation are widely available in Umbulharjo, especially in the sub-village of Pangukrejo. Pangukrejo, the smallest area in Umbulharjo village, is home to about 700 families. The majority of Pangukrejo residents work in the Lava Tour tourism.

This case study uses the Umbulharjo residents as the subject of the research. A case study is sometimes considered an approach rather than a methodology [13]. But according to Cresswell, a case study is also a methodology [14]. The reason for the selection of a case study is that the subject tends to be specific and the study focuses on a particular phenomenon that tends to be unique (difficult to find). According to [15], a case study is an empirical inquiry that investigates a phenomenon in a real-life context. The characteristic of a case study is to develop in-depth descriptions and analysis of a case or various cases.

The data collection is done in various methods, i.e. participant observation, interviews, as well as tracking and collecting documents. According to [16], interviews are an interaction that involves exchange/share of rules, responsibilities, feelings, beliefs, motives and information. Other data sources are documents. Documents are "mute proofs" in which the evidences are physical and can be separated from their authors, producers and users, both on a space and time scale [17]. Copies and documents become the source of data sets that support the interviews. Documents can be a verification tool related to the interview data. In addition, documentation can also serve as detailed supports for other data.

**Lava Tour, A Aommunity-based Tourism Business:**

*Lava Tour* is a type tour that offers trails of Mount Merapi eruption as part of the tour attraction. Meanwhile, "Kaliadem Bunker," a bunker at 7 km from the summit of Mount Merapi, was basically designed to protect people who did not have time to escape the pyroclastic flows of the eruption. Unfortunately, in 2006 the bunker killed two volunteers who were evacuating refugees [18]. They died because the bunker was covered with very hot volcanic ash. The place did give protection from the hot dust, but inside it was not designed to withstand the heat. The 2006 Merapi eruption was initially marked by earthquakes and deformation in April and May 2006.

In addition to Kaliadem Bunker, another tourist attraction is "Petilasan Mbah Marijan." This actually refers a former house of a man named Marijan. "Mbah" is a Javanese term - an ethnic local language in Indonesia, especially spoken in the provinces of Central Java, Yogyakarta and East Java - to refer to grandparents. "Mbah" is also used to honor people who have a strong cultural influence and mysticism within the Javanese ethnic community. Marijan is one of the most influential cultural figures in the Mount Merapi area. The area became his "domain" since he was given the orders by the king of Yogyakarta Province to "guard" the culture and mythology of the mountain and its surrounding community. To "guard" here means symbolically and literally. Symbolically it means to preserve the culture and mystical nature, while literally it means to protect the people and environment of Mount Merapi. Mbah Marijan became a very popular figure on Indonesian mainstream media during the 2006 eruption. He refused to be evacuated when the SAR team arrived, citing that he would only come down from the mountain by the orders of the king of Yogyakarta. Mbah Marjjan finally died during 2010 Merapi eruption after eruption materials hit his neighborhood in Kinahrejo.

Yogyakarta is the only province in Indonesia that is still led by a local king. It is currently ruled by Sri Sultan Hamengkubuwono X, who is entitled to run both a modern and cultural government. Established in the 17th century, the Kingdom of Yogyakarta still holds the Islamic values and its own kind of mysticism and sanctity [19]. So the Merapi eruption in Yogyakarta is not only handled by the official state agency that deals with natural disasters, but it must also involve cultural institutions or figures. These cultural figures or institutions are part of the kingdom, not the governmental structure. As of Mount Merapi, Mbah Marijan was called the

"punokawan," which means the soldiers of Yogyakarta Kingdom and "Juru Kunci" or the key holder of the mountain [20]. As the key holder of Mount Merapi, Mbah Marijan was deeply trusted by the traditional Javanese ethnic community [21]. Another *Lava Tour* attraction is the "Sisa Hartaku" Museum, a museum built independently by the victims of the 2010 Merapi eruption. The objects destroyed during the eruption were put on display in the museum. There is also "Alien Stone," which is a large stone that resembles a human face and is believed to have a spirit and be able to move around.

During the 2010 Merapi eruption, the areas of Kaliadem, Kinahrejo and Pelemsari became the path of the pyroclastic flows. All of the infrastructure was destroyed, leaving no access to Kaliadem tourist spots. The areas turned into a vast desert. To get there people would need a special vehicle. This urged the residents of the Cangkringan region to use motorcycle taxis to transport the victims of the eruption. Later the number of tourists visiting Kaliadem and the Disaster Prone Area III increased and motorcycle taxis were no longer enough to carry them. That was when people started to use double-axle vehicles like Willys, Land Rover and Land Cruiser.

The *Lava Tour*, which was founded after the 2006 eruption, gained even more popularity since the 2010 eruption. The business grew with the emergence of jeep communities who offered transportations to the Lava Tour tourist spots. Since then Lava Tour has become the main tourist attraction where off-road racing enthusiasts get to visit eruption zones and Kali Kuning River.

Tourism business continues to change, including the people's behavior in accessing it. One of the new interests is ecotourism, a tourism concept that emerges as an alternative to mass tourism [22]. Ecotourism is a form of tourism that involves great attention to the sustainability of tourism resources. In a broad context, ecotourism is defined as responsible travel to natural areas that conserves the environment, sustains the well-being of local people and involves interpretation and education [23]. The same definition is also presented by [22] who states that ecotourism emphasizes on the role of tourism in building the interaction with local communities as well as the environment. In this sense, Lava Tour can also be considered as part of ecotourism. When visiting the tour spots, most of the tourists have already understood the history and background of Lava Tour. They also interact with the victims of Mount Merapi eruption and donate money for the survival of the "Sisa Hartaku" Museum, which was built by the community. The roots or

underlying principles of community-based ecotourism derive from the concept of community development, a small-scale, locally oriented and holistic approach to economic growth and social change [24].

*Lava Tour* is a community-based tourism developed by the community independently. According to Bambang Sugeng, the head of the Merapi Jeep Tour Association, Lava Tour is supported by 29 jeep communities with 850 jeep vehicles. In early 2017 there was a dispute regarding the legality of Lava Tour. The Sleman District Tourism Office claimed that Lava Tour was illegal and should be dissolved. But the Lava Tour community in Disaster Prone Area III maintained that they had the right to manage the tour because the tour spots existed on the community land instead of the Sleman government area, such as the Government Forrest Office zone which is located close to the community area. The problem arose because the managers of the Lava Tour community independently took retribution money without permission from the Sleman Tourism Office. The official reprimand referred to the Indonesian Government Regulation No. 87 of 2016 on illegal fees. This prohibition then caused a wave of public protests in the Disaster Prone Area III. The protesters insisted the retribution would be used to build the infrastructure, especially the roads. People in the Lava Tour region realized that the environment in the Disaster Prone Area III would not get a share of development, especially related to the road construction. That is why they felt that retribution money was needed to support the activities of the community in the Disaster Prone Area III and its tourism. No less important is that road infrastructure would be needed to support the disaster preparedness. Infeasible roads would certainly disrupt the evacuation process. So building the infrastructure independently was a must for the people living in the vulnerable area. After several negotiations, it was agreed that the retribution charge was needed, with 40% for the benefits of the residents and 60% for Sleman Tourism Office.

Kus Endarto, one of the staff from the Sleman Tourism Office, confirmed that there was no special permit for community-based tourist establishment from the beginning.

“We [Tourism Office of Sleman Regency] must be firm with the rule regarding the construction of any facilities because it could endanger the people in the event of disasters. That is why we do not allow permanent buildings in the Disaster Prone Area III. As of tourism, the area is only feasible for natural tours, such as lava tour

with jeep riding and visits to the Merapi Museum. We do not allow the establishment of hotels because if there is a disaster who will be asked for compensation? If we gave permission and disasters happen, we would certainly be blamed.”

In the past 5 years, *Lava Tour* has always been one of the top 3 popular tourist attractions in the Sleman region. However, due to unclear legal formalities (related to Disaster Prone Area III), the Sleman Tourism Authority only recognizes Kaliadem as the official tourist destination, while the Lava Tour package (the "Sisa Hartaku" Museum, Petilasan Mbah Marijan, Mbah Marijan Tomb, Watu Alien) is referred to as "natural tourism" of the Merapi slope.

*Lava Tour* as a community-based tourism has a great impact on the economic growth of the people after the 2010 Merapi eruption. This is especially apparent in the Disaster-Prone Area III. According to Fajar Radite, one of the residents of Pangukejo sub-village, about 80% of his fellow people work in the tourism environment, such as mini-shops, attraction rides, jeep driving service and lodgings. The rest or the residents choose not to take part in the tourism activities because of the lack of skills and age. Other popular activities include sand mining, cattle ranching, cow milk farming and agriculture.

**Disaster Resilience through Community-Based Tourism:** According to historical records, the 2010 eruption of Merapi Mountain is the largest in the last 140 years. Before the 2006 eruption, previous big eruptions occurred in 1822, 1872 [25], 1961 and 1969 [26]. From the 7th century to the 16th century, Merapi eruptions had caused many deaths [27]. The 2010 eruption recorded 386 deaths and about 400,000 displaced people [27]. After the eruption ended, Indonesia's Research and Development Center of Geological Disaster Technology (BPPTKG) released maps of Disaster Prone Areas III, II and I for the 2010 eruption.

After BPPTKG released the maps of Disaster Prone Areas, in accordance with the Law on Disaster Response no 24 of 2007 article 47, the residents of the dangerous area must move to safer grounds. And referring to Law No. 26 of 2007 on Spatial Planning, the state is obliged to provide a safe place for people who live in areas prone to disaster. So the government built "hunian tetap" (permanent settlements) -shortened into "huntap"- for the threatened residents. The many *huntaps* provided by the government after the Merapi eruption included Buluk Susukan, Karangkendal, Plosokerep, Batur, Pagerjuran,

Gondang 2, Gondang 3, Dongkelsari, Gading, Banjarsari, Jetis Sumur, Kuwang, Randusari, Kisik, Gambretan, Cancangan, Clipping and JIapan. However not all of the people were willing to live in the *huntaps*. They prefer to remain in the disaster-prone areas instead.

There were various reasons that made some people insist to stay in Disaster Prone Area III. One of them was because they wanted to stay close to their economic resources. As in the village of Umbulharjo, especially in the sub-village of Pangukrejo, about 400 families out of 700 families chose to stay behind. They were reluctant to leave their activities in tourism and cattle ranching. In Pangukrejo there were 5 communities of jeep taxis that supported the Lava Tour, all of which were ran by the residents of Pangukrejo. It was this strong economic reason that people insisted on staying in the danger zone. Those who were used to living with cow livestock also refused to leave their homes, citing the lack space for cattle ranch in the government-provided settlements.

Natural disasters can reduce and stop the economic activities of the community. More than anything, what they needed was assistance to keep the wheels of their economy turning [28]. The development of the Lava Tour was one of the ways people can take to restore their economy and so were other tourism activities at Mt. Merapi. These new efforts might not return their previous livelihood, but the people were ready to accept the change and adjust themselves to the new situation.

*Lava Tour* is an organic community-based tour. According to Subagyo, the head of Pangukrejo sub-village, initially in 2010 and 2011, the Merapi eruption survivors only drove the "tourists" to eruption areas to visit tour spots like Mbah Marijan's former home and the remaining houses affected by the eruption. They did it using ordinary motorcycles. However, because the road was in such a poor condition, they had to replace the motorcycles with trail bikes, which later were replaced with double-axle cars or what they called "jeeps." Purnomo, a resident of Glagahharjo, one of the villages located at the entrance to the Disaster Prone Area III, is one of the successful lava tour operators who offer taxi services with Lava Tour.

"I took a trail motorbike loan in 2011. I did not expect to be able to pay back the loan in just 6 or 7 months as it was actually due in 24 months, but I did. Then I bought another motorbike. But because the lava tour agreement only allows for two bike possession, I chose to sell both of my bikes and buy a used jeep from the community of jeep taxis at Mt Bromo - the Mt Bromo tour in East Java also provides jeep taxis for transportation."

Along with the nature of disaster tourism, tourists came and looked around to show sympathy. They would pay the taxi services and gave tips to the people willing to take them to the eruption areas. Most of the tips usually came in a large sum. Fajar Radith, a jeep taxi driver, called the lava tour in 2010 and 2011 "the sympathy tour" as visitors came to extend their sympathies to the victims. However, in 2012 they started to manage the tours more professionally. Tour fee was established, the jeep community wore official uniforms and the retribution fees, parking lots and mini-shops were arranged.

For most of the 2010 Merapi eruption victims, Lava Tour was a way to survive after the disaster destroyed the most part of their lives. By managing the tour, the communities in the Disaster Prone Area III had a hope to restore their economic situation, although they had to adapt to new environmental conditions. More than an economic source, Lava Tour has become a solution for the community to independently reconstruct their lives after the eruption.

To strengthen the community resilience after the eruption, residents of Disaster Prone Area III were determined to adapt to their new environment. They collected a small portion of the profits from the tourism business to finance infrastructure development, such as water and electricity installation. The budget needed for the projects was quite high. The plumbing installation alone cost around \$22, 000, all of which came from community dues.

Not only adapting to new environments, communities in Disaster Prone Areas III should also be able to increase their capacity to cope with disasters. Recognizing that they were living in vulnerable areas, in October and November 2017, the people of Pangukrejo sub-village held discussions and simulations on how to deal with eruptions [29]. On November 5, 2017, they carried out an "independent evacuation simulation, " a simulation program in which all funds and human resources were independently collected by Pangukrejo community members. To implement the program, they worked together with 5 *Lava Tour* transport communities.

The evacuation simulation was accompanied by BPPTKG as a reliable source of scientific information. The independent program was not intended to deal with the big eruption of Mount Merapi, but to face phreatic eruption. According to Nurcholik, a BPPTKG staff, " phreatic eruption is difficult to predict." It carries gas content and is not preceded by a strange vibration in the seismograph. Instead, it is marked by deformation (swelling on the surface of the mountain).

This independent evacuation simulation was based on the phreatic eruption of Mount Merapi in 2013 and 2014 and the phreatic eruption at Silisan Crater of Mount Dieng on July 2, 2017 (Mount Dieng is located about 80 km from Mount Merapi). The Mount Dieng phreatic eruption was quite large. It occurred during a long holiday season and caused panic among the tourists, injuring 20 of them. Learning from these phreatic events, Pangukrejo residents took the initiative to carry out the simulation program.

To support the evacuation program, the people made use of every resource they had during the simulation. One of them was the jeeps they usually used for the Lava Tour. Therefore, they invited jeep communities to take part in the simulation on November 5, 2017. They included the communities of Pangukrejo sub-village, TLMC, JWM, MLCC, Merapi Jaya and Belantara. They believed that their jeeps were an important asset they could utilize during emergencies. Through the evaluation of the simulation, they were able to identify the shortcomings of the program and decide what to do to improve it. The head of sub-village Pangukrejo community said that they would continue to develop the simulation.

When they decided to live in Disaster Prone Area III, the people were aware of the risks. They knew that they had to do something to build the community resilience in the wake of natural catastrophes. That is why they decided to manage disaster tours and strengthen their capacity in dealing with the mountain's eruptions.

**Disaster Tourism as Disaster Literacy:** Disaster Tourism is quite an interesting tourism phenomenon to discuss. Its concept is often compared to Dark Tourism, although the later is more popular. But when studied carefully, Disaster Tourism and Dark Tourism have some differences. The controversy surrounding a disaster being used as a tourism commodity is related to the definition of tourism itself. Tourism comprises the activities of a person or a group of people traveling to and staying in places outside their usual environment for leisure and entertainment. But over time, the definition of tourism continues to change. The behavior of people in accessing tourism also begins to change. Take, for example, the concept of ecotourism.

*Lava Tour* is located in Yogyakarta, a popular provincial area that has become the most popular tourist destination in Indonesia after Bali. Lava Tour and Yogyakarta have a mutually beneficial relationship: Yogyakarta as a popular tourist destination and *Lava Tour* as part of Yogyakarta. People are still enthusiastic to

visit the tourist area of Merapi, although the objects of attraction are no longer the same since the 2006 and 2010 eruptions. The 2010 Disaster Risk Area III used to be popular tourist destinations, namely Kali Kuning, Bebeng, Kopeng and Kali Adem. The area was a popular camp site and become an alternative tourist site to Kaliurang. However, after the 2006 and 2010 Merapi eruptions, the landscape changed.

Disaster Tourism is a way of understanding the impact of disasters through tourism. This type of tourism is essentially an educational tour that shows destruction, death and revival as a tourist attraction. The testimony of the victims, as well as the locations of the event, become authentic objects to study. The emotional impact gained from Disaster Tourism is more pronounced compared to studying the disaster in the museum. Based on this concept and definition, Disaster Tourism is different from Dark Tourism. While the fascination of Disaster Tourism comes from how destruction and death do not completely diminish people's hope to survive, dark tourism offers a way for an individual to contemplate on mortality [30]. So although the tourist objects of Disaster Tourism and Dark Tourism can be the same, such as Chernobyl and Auschwitz, the basic concept and purpose of the tours are quite different. The spirit of Disaster Tourism is more similar to that of ecotourism.

The trip of tracing the trail of disasters is an exciting experience that people can get in Disaster Tourism. The tourists are invited to see firsthand the damage caused by the disaster. On Lava Tour, tourists can tour the areas affected by the Merapi eruption on jeeps. The driver, who is often one of the survivors, would explain how tremendous the 2010 eruption was. Communication and interaction between drivers and tourists are important factors in creating a memorable trip. It would give visitors a better understanding on the disastrous event. The trips to the disaster areas become a kind of ritual to remember the grief and lives of the victims. However, 5 years after the Merapi eruption hit the mountain's surrounding areas, people go on a Lava Tour with a more pragmatic attitude, reducing the "literacy" part of the disaster. The tour providers are no longer that enthusiastic in informing the details of the disaster and the visitors come with their own various reasons. Some are there only to enjoy the sensation of riding the jeep on the eruption roads while enjoying the natural landscape and some others come only to experience the off-road trip. Only a few visitors take the tour to find information and real facts about the phenomenon of Merapi eruption.

Basically the lava tours are a perfect means to share the knowledge of the disaster, but the different reasons that people have on coming to the areas make the idea of "disaster tour" less distinct. And this is unfortunate because many of the tour providers are survivors of the 2010 disaster - they possess a great knowledge and experience to share with the public.

### CONCLUSIONS

Turning a disaster into a tourism attraction is a way for the communities in disaster-prone areas to build post-disaster resilience. The people of New Orleans successfully did it following a Katrina Hurricane in 2005. The public's enthusiasm and curiosity in finding out the aftermath of the catastrophe urged the survivors to come up with the idea of offering disaster tours. Similar thing was done by the victims of 2010 Merapi eruption with Lava Tour. Lava Tour deserves a close study to see how the people living in Disaster Prone Area III survived and independently reconstructed their economic conditions after the catastrophe.

This article provides three contributions to the disaster tour study. Firstly, Lava Tour is a tourist attraction that is founded independently by the communities living in Disaster Prone Area or the survivors of the 2010 Merapi eruption. It started with the community wanting to help visitors see firsthand the locations affected by the eruption. From there, they got the idea of making the activity as a profitable tourism to help themselves rise from adversity. These conditions continued until 2012, when they finally founded Lava Tour. What initially was done sporadically and with little coordination later became a serious effort to survive after disaster. Now they have Merapi jeep communities, official regulation on retribution and territorial tourism management, which turns in Disaster Risk Areas III into tourist destinations. In the end Lava Tour managed to operate well, even though it is run independently by the survivor communities instead of professional workers.

Secondly, Lava Tour is the way the people living in the Disaster Prone Area III of Mount Merapi survive after their lives were destroyed by the 2010 eruption. Disaster Prone Area III is not recommended for permanent stay. People are allowed to go there for limited activities. But the Lava Tour business had become their livelihood, so despite the risks, it was inevitable that they wanted to return and live in the Disaster Prone Area to be close to their economic resources. Because of the lava tour

business, they were able to rebuild their homes despite the lack of infrastructure, such as poor road conditions and water sources. Thanks to Lava Tour, their economic condition got better. Basically, Lava Tour is how the eruption survivors build their post-disasters resilience.

Third, Lava Tour has become a disaster tourism offering attractions of the debris or traces of disaster to the public. In the beginning people came to have a "picnic" and show sympathy toward the victims. The residents would show them the houses where they used to live in before the eruption. But over time, the values of Lava Tour as a disaster tourism changed. The pragmatism of several tour providers, who only run the tours as a profession and the character of the visitors, who no longer come to learn the history of Merapi eruption, lessens the spirit to improve the disaster literacy. This is what makes the lava tour values shift from disaster tours to off-road attractions.

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