Tourists’ Safety of Coastal Tourism Revisited

a study at Parangtritis Beach, District of Bantul, Yogyakarta Special Region

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Abstract—The research examines on three questions. The first question is to figure out how practices on responding to hazards, disasters, and disaster risks are applied in the field and to what extent human resources and facilities supports the policies, regulations and plans for hazards, disasters and disasters risks identified and happened in Parangtritis Beach. The second question is to what extent policies, regulations and plans on safety are applied when hazards, disasters and disasters risks occur in Parangtritis Beach and how the policies, the regulations and the plans on safety are delivered to tourists by the management of Parangtritis Beach. The third question is what recommendations can be provided regarding to safety, especially for tourists at Parangtritis Beach. Therefore, it is expected that the management of Parangtritis Beach understand on how to respond towards hazards, risks and disasters. Above all, the management can guarantee the safety of tourists when risks and disasters threatening the lives of tourists when they visit the destination.

Keywords— safety; hazards; risks; disasters; Parangtritis Beach.

I. INTRODUCTION

A. Background

Indonesia is an archipelago country which has 17,508 islands with 54,716 km coastlines1. Its coastlines present beautiful beaches which are explored as tourism attractions for tourists to visit. In contrast, as stated by Cioccio and Michael (2007) in Ritchie2, “the nature of tourism environment is hazardous … so threaten the existence of these regional enterprises, not to mention both visitor and local lives”. In fact, tourists would like to feel safe when they visit destinations. As confirmed by Dmitrovic & Kolar (2007) in Garg3, safety and security are two of several external factors influencing tourists to visit destinations. Unfortunately, hardly do the management and other tourism stakeholders consider and provide some attentions to safety of tourists. Therefore, the management and tourism stakeholders do not have the capacity to manage risks and disasters when they occur in the destination. In fact, the management and the tourism stakeholders have the responsibility to guarantee the safety, and of course the lives of tourists, and people living surrounding tourism destination, when risks and disaster risks occur in the destination. As a consequence, the risks and disasters which are not well-managed may threat the lives of tourists visiting the area.

The locus of this small study is a tourist destination of Parangtritis Beach, Bantul District, Yogyakarta Special Region. Parangtritis is located in the southern part of Yogyakarta Special Region. It is exposed directly to subduction zone of Indo-Australian Plate and Eurasian Plate and is prone to earthquakes and tsunamis4. There had been two tsunamis hit this area since 1920. The first tsunami was in 1994 and the second one was in 2006. The 2006 tsunami occurred due to an earthquake with magnitude of 7.7 Richter scale located in 34 km depth in the Indian Ocean. There are four reasons of opting Parangtritis Beach as the locus of the research. First, Parangtritis Beach is one of the most visited beaches in the region. People from Yogyakarta and its surrounding area spend their weekend or have their recreation activities in Parangtritis Beach. Due to the fact it only takes less than one hour by car from the center of Yogyakarta to go to the beach. Secondly, Parangtritis Beach provides various tourism experiences for tourists. People visit Parangtritis Beach for its beach tourism, its cultural tourism, its adventure tourism (for instance, paragliding and rock climbing), and culinary tourism5. In 2015, there were 1,999,870 tourists visiting the beach with the income for the district from tourism sector was IDR 9,478,437,5006. The third reason is risks due to the nature of the environment occurred at

6 The data of numbers of tourists and income for the governmental district was provided by the Head of Section of Infrastructure and Facilities of Tourism Office of District of Bantul on 25 April 2016.
Parangtritis Beach. The risks threatening lives of tourists are risks of drowning and rip current that most of the victims found dead. In 2014, there were 59 persons saved from sea accidents and 5 persons found dead. The fourth reason is hazards identified at southern coastal line facing to Indian Ocean. Hazards identified at the southern coastal line are abrasion and tsunami, including Parangtritis Beach.

B. Literature Review

Amongst scientists and professionals of tourism, it is not always easy to define safety since it is used interchangeably with security. Safety is defined as all actions in order to prevent injury or harm to individual and/or groups and it also requires signs and educational material with internationally well-known symbols and appropriate languages for tourists.

In this study, the research applies definitions taken from UN Office for Disaster Risk Reduction (UNISDR). The first definition adopted is about hazard. Hazard is a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption or environmental damage. Hazard may bring potencies of disasters. However, not always do hazards bring disaster events. Disaster caused by hazards may occur when human beings are vulnerable and do not have the capacity to manage impacts of hazards. Hazards will not bring disaster events when human beings are resilient, not vulnerable and have the capacities to handle all impacts due to existing hazards.

The second definition adopted from UNISDR is disaster. Disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community to cope using its own resources. Furthermore, according to the Management of Coastal Areas and Small Islands Act 27 of 2007, coastal line disaster is event due to natural event or man-made event causing changing on physical and/or coastal biodiversity and resulting life casualties, material loss, and/or damages in coastal line and small islands.

The third definition adopted from UNISDR is disaster risk. It is defined as the potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period. Risk is function from hazard, vulnerability and capacity. The higher the hazard in an area, the higher the risk of the area is affected by the disaster. The higher the vulnerability of society, the higher the risk affects the society. On the other hand, the higher the capacity of the society, the smaller the risk affects the society.

In Parangtritis Beach, there are three identified hazards which may hit the area. They are rip current, tsunami and coastal erosion. Rip current is defined as current concentrated through rip breaking surf zone and crossing the limit of breaking waves. Tsunami is caused by an earthquake from sea floor, offshore, and sea shore. Coastal erosion is the wearing away and breaking up of rock along the coast.

C. Problems Formulation

The first question is to figure out how practices on responding to hazards, disasters, and disaster risks are applied in the field and to what extent human resources and facilities supports the policies, regulations and plans for hazards, disasters and disasters risks identified and happened in Parangtritis Beach. The second question is to what extent policies, regulations and plans on safety are applied when hazards, disasters and disasters risks occur in Parangtritis Beach and how the policies, the regulations and the plans on safety are delivered to tourists by the management of Parangtritis Beach. The third question is what recommendations can be provided regarding to safety, especially for tourists at Parangtritis Beach.

II. METHODS

This small research applied observation and qualitative methods to answer the questions of the research. Observation is looking. There are four types of observational research; structured or systematic observation, unstructured or naturalistic observation, contrived observation and participant observation. Structured or systematic observation needs written rules on what to observe, how often, et cetera in which the results are recorded in a form and analyzed quantitatively. The second type is unstructured or naturalistic observation. This type does not need formal rules and formal recording as well procedures on how to analyze the results. The third one is contrived observation. In this type, researcher tries to change

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7 The data on numbers of Victims of Sea Accidents in Parangtritis Beach in 2014 was provided by BPBD District of Bantul on 25 April 2016.
the environment and observes the results after the intervention. The fourth type allows the researcher to take part in the studied environment. This study, nevertheless, was taking unstructured or naturalistic observational method. There were no specific rules to write and no rigid form to fill. Applying the unstructured observational method, the researcher figured out certain situation of interest.

The second method that was applied for the study was qualitative method, to be specific in-depth interview technique. Qualitative method was taken as the method of this research since it can dig for information from people who are involved personally at the site and are able to describe their experiences or feelings without any obstacles on the framework provided by the researcher. The technique chosen was in-depth interview which was conducted individually. The nature of the research was a small one which only required small number of subjects to be interviewed. In addition to that, there was different information taken from various subjects. Each interview was guided by a checklist of topics, instead of formal questionnaires. Researcher employed simple yet understandable wordings for subjects to understand, especially for tourists and tourism suppliers. Interviews were tape-recorded and verbatim transcript was prepared after all interviews were accomplished.

The subjects to be interviewed were categorized into three groups. The first group was tourists visiting Parangtritis Beach. This group provided information on their knowledge related to hazards and disasters at Parangtritis Beach. The second group was tourism suppliers providing services or goods at Parangtritis Beach. Tourism suppliers provided information and shared their experiences related to hazards and disasters at Parangtritis Beach. The third group was representatives of Tourism Office of Bantul District, BPBD (Badan Penanggulangan Bencana Daerah/Local Agency of Disaster Management) of Bantul District, and Team of Search and Rescue of Parangtritis Beach. This last group was representatives of governmental institutions concerning on tourism and disaster management. Tourism Office of Bantul District is the management of Parangtritis Beach. BPBD is the local agency managing disaster in Bantul District. Team of Search and Rescue is part of BPBD and is the specific team handling the risks and disasters at Parangtritis Beach.

III. RESULTS

A. Observations

Observations were conducted to see situations on certain interests in Parangtritis Beach. The main interests of observations in this research were situations which support safety for the tourists. The first point of interest was to observe entrance ticket to visit Parangtritis Beach that tourists could purchase at the gate. The second point of interest was to observe signage placed in Parangtritis Beach and its surrounding area. The third point of interest was to observe facilities provided and utilized to safe lives of tourists in Parangtritis Beach and its surrounding area.

<table>
<thead>
<tr>
<th>Points of interest</th>
<th>Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ticket</td>
<td>a. Price was IDR 3,750 and insurance premium was IDR 250. Total price was IDR 4,000.</td>
</tr>
<tr>
<td></td>
<td>b. Written down: <strong>DILARANG MANDI DI LAUT</strong> (swimming by the sea is prohibited)</td>
</tr>
<tr>
<td>2. Signage</td>
<td>a. <strong>ARAH EVAKUASI</strong> (evacuation direction), at the opposite of exit path of Parangtritis Beach, pointing to the east about one kilometer from the main gate</td>
</tr>
<tr>
<td></td>
<td>b. <strong>TPA Pengungsian Bulak Mabul 500 m</strong> (Final Point of Evacuation of Bulak Mabul 500 m) on the opposite of the main entrance of Parangtritis Beach and pointing to the east</td>
</tr>
<tr>
<td></td>
<td>c. <strong>TPA Pengungsian Bulak Mabul 400 m</strong> (Final Point of Evacuation of Bulak Mabul 400 m) on the opposite of the exit of Parangendog Beach and pointing to the east</td>
</tr>
<tr>
<td></td>
<td>d. <strong>TPA Pengungsian Bulak Mabul 300 m</strong> (Final Point of Evacuation of Bulak Mabul 300 m) on the corner of a T-junction, pointing to the north and going to a hilly site</td>
</tr>
<tr>
<td></td>
<td>e. information board on tsunami, written down <strong>Prosedur dan Rencana Evakuasi Tsunami Pantai Parangtritis Baru, Pantai Parangtritis, Pantai Parangendog Kabupaten Bantul</strong> (Tsunami Evacuation Procedure and Planning of Parangtritis Baru Beach, Parangtritis Beach and Parangendog Beach, District of Bantul) on the seashore of Parangtritis Beach</td>
</tr>
<tr>
<td></td>
<td>f. not occupied and placed on a tree in front of shelter of SAR Team, written down <strong>Daerah Pusing Laut, Awas Berbahaya!</strong> (Rip Current Spot, Dangerous)</td>
</tr>
<tr>
<td>3. Facilities</td>
<td>a. post of SAR team, on the left side of entrance gate of Parangtritis Beach</td>
</tr>
<tr>
<td></td>
<td>b. a boat which was located close to the post of SAR Team</td>
</tr>
<tr>
<td></td>
<td>c. small shelters by the beach side</td>
</tr>
<tr>
<td></td>
<td>d. motorbikes of SAR Team</td>
</tr>
<tr>
<td></td>
<td>e. siren placed at the back side of the post of SAR Team</td>
</tr>
<tr>
<td></td>
<td>f. personnel of SAR Team with life vest on the chest of the personnel</td>
</tr>
<tr>
<td></td>
<td>g. paths and road to go to evacuation point</td>
</tr>
</tbody>
</table>


B. Tourists

Tourists provided information on their knowledge and awareness related to disasters and hazards at Parangtritis Beach. There were eight domestic tourists interviewed randomly, 4 males and 4 females, aged between 15 years old to 55 years old. They were from Yogyakarta, East Java, Central
Java and West Java. Two out of eight tourists had visited Parangtritis Beach for more than ten times and the rest had visited it for less than five times. Two of tourism suppliers earned their living by providing service or goods for less than five years. The other five provided service or goods at Parangtritis Beach for more than 10 years. There were three topics to be asked to tourists during in-depth interview. The first topic was whether they were informed about rip current, the 2006 Pangandaran tsunami disasters and erosion occurring in Parangtritis Beach. The second topic was whether they were aware and could recognize any facilities placed and safety personnel stayed in the beach. The third topic asked to tourists was whether they could find any information or notification on the spot explaining on what rip current is, how to recognize rip current, what to do shall there be tsunami hit the area and what erosion is.

TABLE II INTERVIEWS WITH TOURISTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Sub topics</th>
<th>Number of persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Informed disasters hit</td>
<td>Rip current</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Tsunami 2006</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Erosion</td>
<td>0</td>
</tr>
<tr>
<td>2. Recognized facilities and SAR Team</td>
<td>Board</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Shelter</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Boat/surfing board</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Motorbike</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Siren</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Personnel of SAR Team</td>
<td>3</td>
</tr>
<tr>
<td>3. Informed or notified about hazards on the spot</td>
<td>Rip current</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Tsunami</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Erosion</td>
<td>0</td>
</tr>
</tbody>
</table>

C. Tourism Suppliers

Tourism suppliers provided services and goods at Parangtritis Beach. In this research, tourism suppliers provided information and shared their experiences related to hazards and disasters at Parangtritis Beach. Seven tourism suppliers at Parangtritis Beach were interviewed randomly for the research. They were food stall owners, house cart keepers, grilled corn sellers, and an on-site photographer. Six of them were living at the coastal lines of Parangtritis Beach and one of those six was from Sleman District. One out of seven was living not far from the beach.

They were four topics proposed during in-depth interview to tourism suppliers. The first topic was whether they witnessed disaster of rip current, whether they experienced the 2006 Pangandaran tsunami and whether they experienced or witnessed erosion. The second topic was whether they were aware and could recognize any facilities placed and safety personnel stayed by the beach. The third topic was whether they understood about hazards at Parangtritis Beach. The hazards are rip current, tsunami and erosion. The fourth topic was whether they received any information about hazards and they participated in any socialization on hazards conducted by government or other institutions.

D. Representatives of Government Institutions

The in-depth interviews were held to three representatives of governmental institutions concerning on tourism sector and disaster management. They were Tourism Office of Bantul District, BPBD (Badan Penanggulangan Bencana Daerah/Local Agency of Disaster Management) of Bantul District, and Search and Rescue Team of Parangtritis Beach/Bantul District respectively. Tourism Office of Bantul District is the management of Parangtritis Beach as tourism attraction. BPBD is the local agency managing on disaster issue in Bantul District. Team of Search and Rescue is part of BPBD and the specific team handling the disasters at Parangtritis Beach. There were three topics discussed during in-depth interviews. The first topic was whether there are policies, regulations and planning on saving the lives of tourists and people living by Parangtritis Beach due to identified hazards. The second topic was whether the institution organized any socialization on the policies, regulations and planning on saving the lives of tourists and people living by Parangtritis Beach. The third topic was whether the infrastructures and facilities established to support the efforts of saving people’s lives are sufficient.
TABLE IV INTERVIEWS WITH GOVERNMENT INSTITUTIONS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Tourism Office of Bantul District</th>
<th>BPBD District of Bantul</th>
<th>SAR Team Parangtritis Beach/District of Bantul</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Policies, regulations and planning on safety for society and tourists due to identified hazards</td>
<td>Only prevention, with notification board of swimming prohibition. Needs to work with Tourism Office on erosion, but it was not the priority. Priority was still on tsunami. Rip current was SAR Team’s priority. Coastal accident is the priority. Patrol on foot and by motorbike.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Organizing any socialization on the policies, regulations and planning on safety for society and tourists</td>
<td>Never. Socialization handed over to Destana (Desa Tangguh Bencana/Disaster Resilience Village). In 2014, Destana of Parangtritis was established and simulation was held. After earthquake 2006, with GTZ to do simulation and make map on points of evacuations. Simulation was always different.</td>
<td>Never.</td>
<td>In 2007 - 2009, simulation by GTZ.</td>
</tr>
<tr>
<td>3. Infrastructures and facilities established to support safety of society and tourists</td>
<td>Notification board on tsunami, siren (simulation on 26th each month), radio, information board on rip current, evacuation direction board. For Parangtritis: 7 evacuation points, not identified yet whether it was sufficient for tourists. Information board on tsunami, water, low season: 15 persons/shift for low season; 23 persons/shift for high season, shelter, post, life vest, boat, surfing board, motorbike, boards on warning of rip current.</td>
<td>Siren, personnel (50m away from water, low season: 15 persons/shift for low season; 23 persons/shift for high season), shelter, post, life vest, boat, surfing board, motorbike, boards on warning of rip current.</td>
<td></td>
</tr>
</tbody>
</table>

IV. DISCUSSIONS

Safety of tourists depends partly on implementation of the policies, regulations and planning in the field. Moreover, policies, regulations and planning must reach tourists since they are lacking of information about the tourism attraction. However, such situation is not yet implemented in the field currently in Parangtritis Beach as tourism attraction. From the observation and interviews conducted, policies, regulations and planning concerning tourists’ lives related to disaster risks must be revisited.

Several infrastructures and facilities did not support the actions to save lives of tourists and people living surrounding Parangtritis Beach. Several facilities were not visible, not seen strategically and lacking in numbers. For instance, a signage pointing to evacuation location was half covered by another signage (which was also placed by other governmental institution). Signage on prohibiting swimming by the seashore was also limited in numbers. Tourists could not recognize easily the signage. In addition to that, signages placed by the beach and its surrounding area were written down only in Indonesian. Another obvious example was information board on procedure of evacuation when tsunami hit the area. This board was also placed under a tree and not strategically seen. Hardly did tourists come over and read the board. Moreover, it would not be possible for a group of 300 people stepping out of the bus at once would stand and read before the board. Motorbikes of SAR team as facilities to support the acts of tourists’ safety were another matter. They were not visible due to the fact that there were many motorbikes back and fro by the seashore of the beach, such as finger-snack seller motorbike and on-site photographers.

Other facilities observed were paths from the beach to the main road and the main road to the evacuation point. The paths and main road were quite narrow. The neighborhood was inhabited by societies. The seashore was full of houses, shops, food stalls and hotels operated along the paths to go to the main road heading to evacuation point. Reaching the evacuation point, the area was quite wide. Apart from the narrow path to go to the evacuation point, the capacity to carry numbers of inhabitants and tourists must be reconsidered. The area might be able to have inhabitants, but not tourists from the tourism attraction. Another disaster risk might arise. That is crowding people trying to reach the evacuation point. Therefore, capacity of the evacuation points must be reviewed in order to avoid secondary disaster.

Information provided in the field about rip current, tsunami, and erosion was quite limited in order to facilitate the actions of saving people’s lives. Information on rip current was only about placing boards on prohibition to swim by the seashore. There was no information about what rip current is, which spots rip current might occur, what the characteristics of rip current and how to identify rip current when it occurs in the sea. Most tourists visiting the beach are intended to swim or to play by the seashore. To forbid tourists to swim by the seashore will not be an effective way to reduce the risks of rip current. Tourism suppliers understood well about rip current since they were used to see rip current. They could share well information about what the characteristics of rip current are and which spots rip current might occur.

Other than board on how to evacuate when tsunami hit the area, there was no other facility to inform tourists about tsunami as a hazard identified in the area. Tourism suppliers staying and earning their living in the area for more than 10 years understood about tsunami and how it can happen. They could share how the 2006 Pangandaran tsunami hit the area. Another hazard, that is erosion, was not well recognized by tourism suppliers. There was no information for tourists and inhabitants about erosion as a hazard identified in the area.

Socialization about hazards identified in Parangtritis Beach was lacking in number. From the interview organized, only...
one out of eight tourism suppliers understood and attend the socialization which was held in 2007, after the 2006 Yogyakarta earthquake. It would not be easy to gather people and tourism suppliers to attend socialization due to the fact that socialization on hazards and disaster risks might be considered not important now. Besides, many tourism suppliers did not stay and live in Parangtritis Beach area.

Coordination amongst governmental institution is required to support the acts of saving lives of tourists and inhabitants. Tourism Office of Bantul and BPBD were supposed to work together. From the interviews organized, there was a segregation work between Tourism Office of Bantul and BPBD. They did not coordinate to have common actions on the issue of tourists’ safety. For example, there was no cooperation to organize socialization on hazards and disaster risks in tourism attraction for safety of tourists, and of course for inhabitants. Such situation would harm tourists since their lives are not the priorities in the tourism attraction. Later on, it will also harm tourism sector in the area. When the area has a negative image concerning on safety of tourists, numbers of tourists are declining. At the end, income of people depending their living from tourism sector will reduce and also regional income for the government from tourism sector will also decline.

V. CONCLUSIONS AND RECOMMENDATIONS

Tourists become parts of vulnerable group when they visit tourism attractions due to the ignorance of governmental institutions on their safety. It is their rights to feel safe when they visit tourism attraction. It indicates then that it is the duty of governmental institutions to protect and save the lives of tourists, and society of course. For this, governmental institutions must reformulate and implement clearer policies, regulations and planning on safety of tourists in tourism attraction. It also requires coordination amongst governmental institutions which relate to tourism sector, disaster management and infrastructures of tourism attraction. In addition to that, governmental institutions must integrate tourists within their policies, regulations, and planning concerning disaster management issue. There are several recommendations to be addressed in this research.

The first recommendation is related to established facilities. Facilities placed in Parangtritis Beach and its surrounding area must be improved and refined. Signage must be placed in strategic sites to be invisible for tourists to see. Tourists will feel safe and secure when facilities and also personnel are placed in the tourism attraction. In addition to that, signage must be written in English, not only in Indonesia, since foreign tourists also visit and spend their time in Parangtritis Beach. Therefore, foreign tourists comprehend on the message delivered on signage. In addition to that, signages must be duplicated. Hardly do tourists see the signages since they are not placed in several spots.

The second recommendation is to conduct socialization on hazards and disaster risks amongst governmental institutions. In addition to that, socialization must be organized regularly. The participants of socialization are inhabitants living in Paraengtritis Beach and tourism suppliers who are not living in the area. Tourism suppliers are strong agents to provide information on hazards and disaster risks for tourists. Tourists may also take part in socialization, whenever possible. Therefore, tourists also participate in issue concerning their lives.

The third recommendation is to consider accessibility of evacuation points. It includes refinement roads and paths to reach evacuation points. The paths and roads to go to evacuation points are too narrow and full of houses of inhabitants. Accessibility includes capacity of the evacuation points to accommodate inhabitants and tourists. The evacuation points must be available and adequate for everyone.

The fourth recommendation is to create various information channels. Delivering message through signage is not sufficient to inform tourists about hazards and disaster management on the site. The idea to design entrance ticket with information on hazards and disaster risks must be considered as a priority. In addition to that, producing leaflet and other information and communication tools are required to disseminate the information about hazards and disaster risks. Another thing that can be organized is to work with mass media to disseminate information on hazards and disaster risks in Parangtritis Beach.

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[14] The data of numbers of tourists and income for the governmental district was provided by the Head of Section of Infrastructure and Facilities of Tourism Office of District of Bantul on 25 April 2016.

[15] The data on numbers of Victims of Sea Accidents in Parangtritis Beach in 2014 was provided by BPBD District of Bantul on 25 April 2016.