

Flood Emergency Response Management in Gunungkidul Regency

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On November 27, 2017, Gunungkidul Regency of Yogyakarta was hit by a flood caused by tropical cyclone Cempaka. This extreme weather has caused fatalities and damage to properties worth hundreds of billions of rupiahs. In response to the disaster, a humanitarian solidarity action namely “Aksi Berbagi Handayani” (henceforth referred to as ABH), involving 232 organizations and communities consisting of student organizations, youth organizations, and various communities, conducted an emergency response in Gunungkidul. This action was initiated by volunteers from organizations, such as Gunungkidul Menginspirasi (GM), Rumah Belajar Rakyat (RBR) in Siraman Wonosari and the Gunungkidul Student Association (IMG). In less than a month, the emergency response management undertaken by ABH received remarkable results to provide help and assistance to the victims, reaching 12 sub-districts, 160 villages, 3232 families, 94 schools or 4005 students. With around 1072 volunteers, the alliance has attempted various efforts, such as rescue, trauma healing, inspirational classes, environmental work, health services, disaster mitigation socialization, geo site education, education of clean healthy lifestyle, as well as facilitated the donation of food, household appliances, school equipment and medicines. The success of ABH can be used as a role model for emergency response management of flood disasters in other locations. Social assistance, such as good social networking can help the success of disaster management in a community.

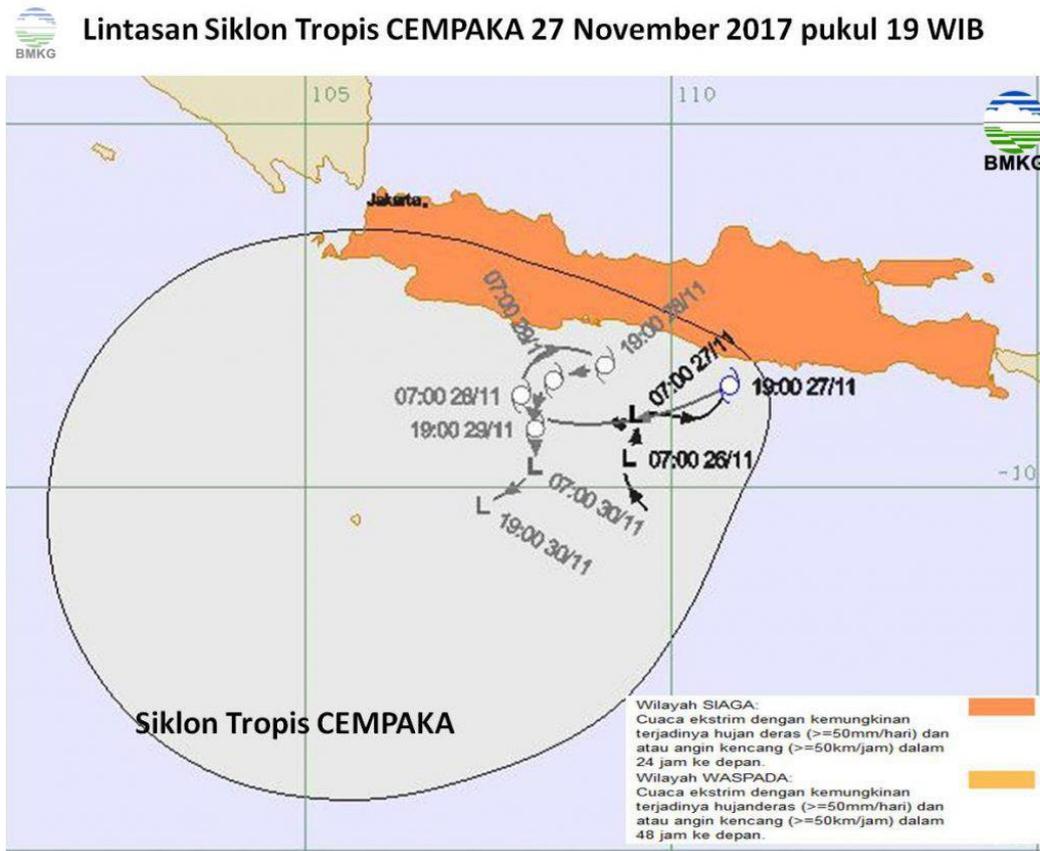
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Introduction

Disaster management can be defined as disaster management policy through organizing appropriate steps. Disaster management is aimed at preventing and coping with the impacts of a disaster. Different locations or areas require different disaster management techniques; it also depends on the management standards and other activities related to the types of disaster (Carter, 1991). Regarding the model of disaster management, Carter, in his work entitled *Disaster Management, a Disaster Manager's Handbook*, (1991) points out a model of the disaster management cycle with a basic format comprising of activities, e.g., prevention, mitigation, preparedness, disaster impact, response, rehabilitation or recovery and reconstruction or development.

The Issue of disaster management, in its development, has been associated with the topic of management considering different types of disaster. Flood is a natural disaster which can hit areas, regardless the condition of the area. Such a disaster affects material losses, or even causes death (Dahal, 2012). These are the problems caused by flooding if people are unaware and/or unprepared to respond to the disaster. Preventing and predicting flood is possible due to the rapid growth in technology development, particularly in the early detection of flood. However, awareness of the society is also essential to prevent loss.

People's awareness has been raised along with the progress of information development. This can be seen from their response regarding the flooding of particular areas, for instance, when the flood struck Gunungkidul Regency, on November 27, 2017; 18 sub-districts and 160 villages with 2232 families were hit by the flood. The team of ABH reports that two people died in this disaster. Furthermore, the flood also damaged 15 Regional Water Supply Company buildings, 22 power lines, 402 houses, and 72 public facilities (BPDB, 2017). This human tragedy is allegedly caused by unstable weather condition in the Indian Ocean. Further, the Meteorology, Climatology and Geophysics Agency reported that the main cause of high intensity rainfall, which caused the floods in Gunungkidul and surrounding areas, was cyclone Cempaka.



Source: BMKG, 2017.

Cyclone Cempaka shifted from the India Ocean to the Java Island and caused massive damage. Facilities and infrastructures, e.g., houses, rice fields, plantation, and factory buildings were damaged due to the phenomenon. According to data by BNPB, the estimated loss is more than Rp100 billion (BNPB, 2017).

The silver lining in this massive loss is the way the people immediately responded and helped the victims in Gunungkidul regency. The people in this region are aware of and care for others (Sudibakyo, 2011). Around 232 organizations and communities cooperated in ABH. This humanitarian action has managed to raise funds of around Rp258,999,351, which were collected from November 28 to December 20, 2017. The funds were able to help 1345 families in just one month (BNPB, 2017).

The social movements of organizations or communities that help alleviate the burden of the victims have at least implemented rapid and precise emergency response management. This can be seen from disaster centres from ABH. Regarding the role of emergency response in coping with the impact of flood, this present study aims to assess the management process of "Aksi Berbagi Handayani (ABH)" in terms of its emergency response to the flood strike in

Gunungkidul, in 2017. It is expected that this study positively contributes to society and government in dealing with future flood strikes.

Research Methodology

This study employed a qualitative method with literature review and field observation to investigate the issue (Alsa, 2007). In developing theoretical construction, this study used *critical theory* that underpins the conduct of research during the field observation. The rationale of using this theory is because of termination and follow-up that can determine the alternatives or the intervention for the victims of flood strike (Morris, 2006). The data was collected during field observation from 11 sub-districts that were hit by the flood. These sub-districts were selected because the researcher was the part of the volunteer efforts of ABH; this is based on the information from an interview with the respondents. This present study was designed based on *rural-satellite* of the village as well as grouping the locations which were impacted by the flood. A direct interaction between the researcher and the respondent was conducted.

In addition to the selection of research sites, the validity of the research results is also maintained by the use of various types of data sources which later serve a purpose for the analysis of the research results. The use of various data sources, better known as triangulation, is an attempt to ensure the authenticity and reliability of the data. Triangulation is simply defined as a technique of examining the validity of data by utilizing the use of variables other than the primary data to check or to be used as a comparison of existing data (Moelong, 2010).

The combination of triangulation method used in this study comprises of technique, such as:

- (a) data triangulation: exploring the information through various sources of data acquisition, e.g., documents or archives, official or personal records, photographs, audio or video recordings, and other resources that will generate data related to flood disasters. In this method, differences in people, time, and space referenced is also taken into account;
- (b) triangulation of the method: this method is used during interviews and observations. The research team examined the validity of the findings on several different research objects. Selecting the respondents was due by using snowball method. This method was used to gather authentic and valid data where the selection of the respondents must be based on the recommendation of the main informants (Siddiqur & Omar, 1983).

Results

Response to the disaster is the basics of the implementation of emergency management. It is aimed at rescuing people and facilities (Rinjani, Hizbaron, & Baiquni, 2015). According to Carter (1991), the procedures within this phase are plan implementation, activation of emergency management system, searching and rescuing the victim, providing emergency food supplies, tents, and medical personnel, surveying and assessing the loss due to the impact of disaster, as well as evacuation. According to Mpandeli and Maponya (2013), this phase is well-known as emergency response; the conduct of this post-disaster act does not take too much time (usually two weeks to three months).

This also applies to the implementation of disaster management of flood in Gunungkidul. The process is begun through assessment (Hang et al, 2012). In this process, a number of organizations were cooperating under an association called “Aksi Berbagi Handayani” (ABH). There were 232 organizations and communities involved in this humanitarian act; some of these are students union, social institution, youth organization, and non-government organization. This action was initiated by volunteers from organizations, such as Gunungkidul Menginspirasi (GM), Rumah Belajar Rakyat (RBR) in Besari Village, Siraman Wonosari and Gunungkidul Student Association (IMG).

The social media campaign was conducted after the first three organizations cooperated in ABH. The campaign received positive feedback from the society. Soon afterward, 232 organizations cooperated in this humanitarian effort (ABH). The association is able to recruit volunteers to help the victim of flood in Gunungkidul. Furthermore, the association coordinates with related stakeholders to go to some areas to identify the condition of the victims in the area. During this phase, other members of the association will be responsible for managing fundraising activities through mass media.

In the first week after the flood strike in Gunungkidul on 28 November 2017, the organization was able to accommodate the assistance and other materials and supplies for the victim, e.g., money, groceries, food, clothes, medicines, hygiene kits, toiletries, school supplies, kitchen utensils, and agricultural tools. Funds collected during the emergency response period number around Rp.258,999,351, including other operational funds. During the first three weeks, starting from November 28 to December 20, 2017, volunteer coordinators conducted flood disaster management in two stages. The process of collecting data and the number of victims from each location point was conducted in the first stage. In the second stage, the team managed to distribute the supplies collected from the fundraising activities.

With the comprehensive management by ABH, the volunteers set off to the locations in the next step. They cleaned up the environment that was hit by the flood. A team consisting of nearly 1000 volunteers spreads across 12 sub-districts, 160 villages, 3232 families, and 94 schools or 4005 students; they even managed to reach remote areas.

Rapid and responsive disaster management leads to the appropriate distribution of help and supplies (Nedvědová & Pergl, 2013; Edward, et al, 2015). Thus, victims of flood strike do not have to wait for help from other institution for a long time. This is an example of the achievement of the association regarding emergency response management. This condition remarks the success of flood control and disaster management in Gunungkidul which impacts on the increase of awareness regarding the importance of social capital with strong local, national, and international networks.

In addition to providing basic supplies, volunteer teams also conducted some educational activities, such as inspirational class, education of clean and healthy lifestyle, education of Geosite area (by Wahana Lingkungan Hidup or Walhi), disaster mitigation socialization by geomorphology experts from Geography Faculty, Gadjah Mada University, public health services, and public discussion on disaster mitigation. These activities were conducted for three weeks. During this process, the volunteers (university students from some cities in Indonesia, e.g., Padang, Aceh, Yogyakarta, Central Java, East Java, Papua, and Kalimantan) also set off to various areas to provide trauma healing services for the victims.

Discussion

Emergency response management, (through GIS Geographic Information System in the context of this study), is developed to identify areas prone to flooding in Gunungkidul. Thereby, parameters are needed to assess the existence of lands prone to landslides and floods. These parameters are namely soil type, slope level, and land use within Gunungkidul area. Basically, floods occur due to a lack of people's awareness to protect the environment (Ministry of Energy and Mineral Resources, 2008).

These are some processes to achieve a successful attempt of emergency response management in Gunungkidul:

- (1) Problem identification: identifying the extent to which disasters can be addressed, studying the impacts of the disaster, keeping people aware of the disasters that have occurred;
- (2) Analysis and consideration: the consideration of the possibility of a disaster-affected area, what kind and impact it may result, providing immediate rehabilitation assistance, and designing the best method for disaster management.;
- (3) Action steps: implementing rehabilitation programs for the affected areas, utilizing the personnel involved effectively, encouraging the community to take an active role in the

rehabilitation of the regions, as well as referring to the applicable procedural guidelines (Sadat, 2016).

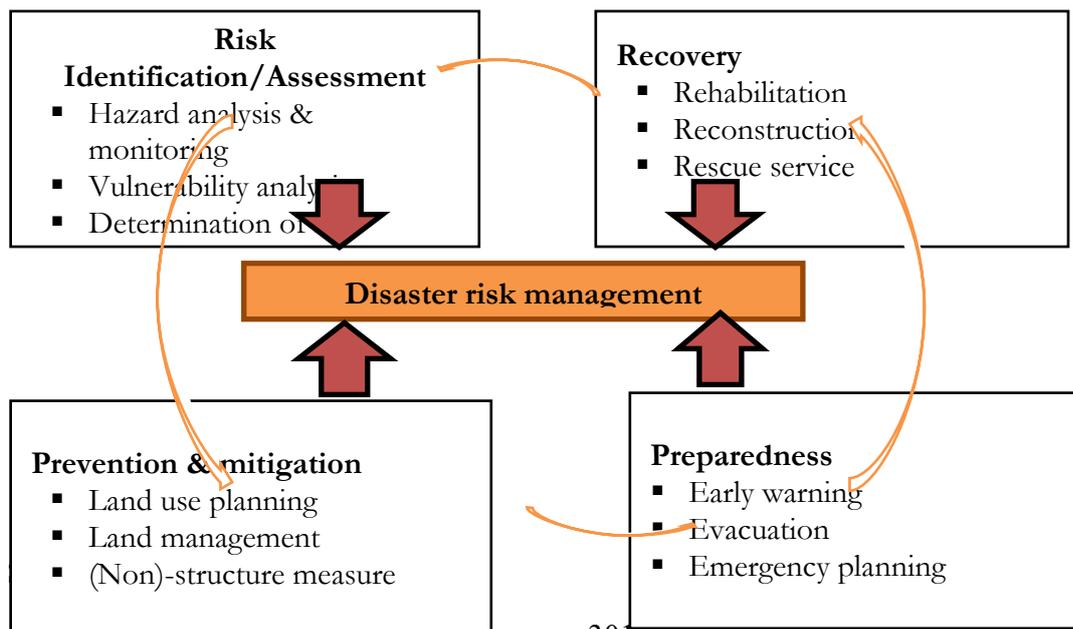
These activities focus on the preparation of the reconstruction program plan which includes:

- (a) applying proper and correct design of existing buildings to anticipate frequent disasters, thus reducing the damages caused by the disaster,
- (b) designing the construction of infrastructure facilities that can monitor the occurrence of disasters in the future, and
- (c) designing the construction of infrastructure facilities that can monitor future disasters in the future (Gaire, Rafael, & Pedro, 2015).

The above descriptions indicate the willingness of the alliance of ABH in assisting post-disaster rehabilitation and reconstruction of disaster victims. Post-disaster reconstruction consists of processes, such as:

- (a) rebuilding social facilities of the community,
- (b) promoting social and cultural life of the community,
- (c) promoting the participation and participation of public organizations, the business community and the public,
- (d) improving social, economic and cultural conditions,
- (e) improving the function of public services,
- (f) improving primary services in the community, and
- (g) promoting other provisions on reconstruction are governed by government regulations (Molinari, Ballio & Menoni, 2013).

Key Elements of Disaster Risk Management



Based on the model developed in the disaster management above, the practice in mitigating the impacts of a disaster has been implemented effectively. This can be seen by the establishment of the humanitarian act in response to the flood strike in Gunungkidul. The success in managing the distribution of aid and fundraising by volunteers is due to the synergy between the stakeholders.

Conclusion

Social institutions incorporated in the "Handayani Share Action" is a prime example of successful flood control and disaster management. This is based on the fact that people affected by the flood are immediately able to recover from the trauma and, on top of that, there are no people who suffer from any severe psychological distress. The success of this association can be an example for other emergency responses at other sites. In addition, ABH is also a role model for the development of emergency response management techniques.

Managing 232 organizations also remarks another great achievement of the association. Furthermore, the high social awareness from the community also contributes to the recovery of flood victims. This infers that the emergency response management from ABH association is, without question, a responsive action.

Still, this study suggests that people should establish other disaster management institutions; the institutions must be prepared to deal with any causalities caused by the disaster. This implies that the institutions must prepare the preventive acts to mitigate the risk and thus minimize the damage to the area. People are urged to maintain their environment since predicting natural disasters is not an easy task.

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