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Flood Disaster Management in Malaysia: A Review of Issues of Flood Disaster Relief during and Post-Disaster

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Abstract

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This paper describes the issues and problem of disaster relief provided by the government to the victims in Malaysia, during and post-disaster caused by flooding. Presently, the delivery relief system in flood management was predominantly an official strategy based on Directive No. 20 by National Security Council (MKN). These instructions outline a policy on disaster management and has set the role and responsibilities of the agencies involved and also covers the action of monitoring the activities in disaster management. Therefore, the focus of this study is on flooding that occurred in Malaysia. This paper presents findings from a literature review on previous research in this topic. The result show that, in Malaysia, a study concerning the evaluation of the effectiveness of policy implementation at levels during and post-disaster that affect the flood victims were poorly implemented. Further to that, this paper will attempt to describe the issues of disaster relief system that has been criticized.

Keywords: Disaster management; flood; disaster relief; post-disaster.

1. Introduction

In Malaysia, flooding is a disaster that dominated from the 1880s until now. In accordance with the statement of Balek (1983), flooding is a natural disaster caused by climate factors such as rainfall, temperature, evaporation, wind and movement of natural conditions on earth. In fact, flooding is a natural disaster that also achieve 40 per cent to 50 per cent of all types of disasters causing deaths in the world (Diaz, 2004; FitzGerald, Du, Jamal, Clark, & Hou, 2010). The National Security Council (MKN)

of Malaysia has classified disaster management into three main stages, pre-disaster, during and post-disaster to ensure a more holistic management. But, unfortunately, the study of during and post-disaster responses has witnessed a decline over last few decades, about the humanitarian assistance (McEntire, 1999; Altay, 2008) Thus, there need evaluation for examining the successes and failures of the recent relief operation.

However, in case of floods, the findings obtained from previous researchers have begun to express a negative view of flood relief policies in Malaysia, as expressed by Leigh and Low that the flood relief operation by Malaysian government is reactive because government will only act after the disaster occurred and did not see a policy as the preparation for the future (Chan & Parker, 1996; Chan, 2012). Although Malaysia has implemented various policies for all the stage, but the policies implemented are identified by previous researchers, there are still some problems and issues for the stage during and post-disaster in terms of the implementation of the assistance and rehabilitation projects for the victims (Chan, 2012; Said, Abdul Gapor, Samian, & Abd Aziz, 2013; Zaiton, Mohd Bahrin, & Zaharah, 2013) which has affected the victims quality of life, and suggested that an evaluation of that policy should be implemented (Roosli, 2010).

Although victims absorb the major share of the losses, they expect will receive disaster relief from both public and private sources. This is particularly true for victims in developing countries such as Malaysia, where disasters create demands that cannot be met by domestic resources. In these countries, disaster impact is generally influenced by the effectiveness of relief and emergency operations given.

2. Disaster Management in Malaysia Context

Disaster management in Malaysia is not focused on a specific type of disaster. Every policy issued is applicable to all types of disasters, including floods. On May 11, 1997, the NSC Directive No. 20 which contains the Policy and Mechanism of the National Disaster Management and Relief has developed. These instructions outline a policy on disaster management and has set the role and responsibilities of the agencies involved at the time needed to deal with a disaster. In addition, the directive also covers the action of monitoring the activities of all agencies involved in disaster management (MKN, 2012). In 2012, the National Security Council (MKN) have updated that Directive No. 20 for been revised to conform with the current changes, as well as the complexity of disasters is often the case at present.

Therefore, disaster management in Malaysia have been placed under the Disaster Management and Relief Committee was formed consisting of the central, state and district levels to manage disaster on each in order to become more effective. Meanwhile, the National Security Council (MKN) is the lead agency for disaster management in the country where the MKN has the responsibility to coordinate and establish and ensure the policies and the disaster management mechanism are observed and implemented at all levels based on Directive No.20. Disaster management committees are run based on three levels, namely, the central committee, state committee and district level committees.

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2.1. Flood Forecasting and Warning System (Pre-Disaster).

Management before the floods in Malaysia is based on the Standard Operating Procedure (SOP) as determined by the NSC to agencies like Department of Irrigation and Drainage (DID), Public Works Departments (JKR), Department of Meteorology and Local Authorities (PBT) includes two steps, namely, structured and unstructured. Structural measures adopted in Malaysia are like dams and dykes to control flood flows and non-structural measures are such as land use planning and flood forecasting and warning systems to mitigate the effects of floods (Chan, 2012; Khalid, & Shafiai, 2015). Structural measures implemented to reduce the danger of flooding so as not to pose a greater hazard to people in the flood plain. Agencies involved in the success of this measure is the Department of Irrigation and Drainage (JPS), Local Authorities (PBT) and the Public Works Department (JKR) (Hussaini, 2007).

Besides that, the agencies involved in disaster management of unstructured is the Malaysian Meteorological Department (JMM) and the Public Works Department (JKR) (MKN, 2011). Records indicate that the flood warning service was first made available when disaster struck in 1925 along Sungai Kinta in Perak, Sungai Klang, Sungai Selangor and Perak. In fact, the flood warning system is used based on the level of the river in Sungai Kelantan, Kuala Krai region to warn residents downstream Kota Bharu since early 1900. Police will be empowered to see that the water level of rainfall and sends the information via VHF set to Warning Flood Relief Committee and act in Kota Bharu (Jabatan Pengairan dan Saliran, 2013).

After the 1971, flood warning systems in major rivers that often suffer severe flood disaster has been reviewed. Until 2009, DID has placed about 335 telemetric rain gauges and 208 water level stations telemetric around 40 river basins to get real-time for monitoring floods. In addition, at the observation center, 400 river gauges are available with manual flooding and more than 250 stations have been established siren (Jabatan Pengairan dan Saliran, 2013).

Real-time information on rain and water levels also have been issued to online via the website Info-Flood and can be accessed directly by government officials and the public. In addition, the short message system (SMS) is also provided to warn employees of related government agencies such as the Police, the Army, the Malaysian Meteorological Department (JMM), Civil Defense Department, the Department, and National Security Division (BKN) in the Prime Minister and other agencies involved (Jabatan Pengairan dan Saliran, 2013). The Meteorological Department has also provided a weather forecast web site to facilitate public access to current weather conditions.

In 2001, Malaysia has introduced '*Manual Saliran Mesra Alam*' (MSMA) to be used as a tool in integrated flood management (Chan, 2012; Musa, Chan, Ku Mahamud, Karim, & Zaini, 2013). In contrast, an example of which is seen nonstructural methods are effective flood forecasting and warning system (Jabatan Pengairan dan Saliran, 2013). The methods used for the management of flood disclosed before it has been shown that Malaysia has certainly had an initiative to reduce the impact of floods on human health and life at risk areas.

2.2. Flood Relief Machinery (During and Post-Disaster)

Management of flood victims during and after the flooding situation in Malaysia also is based on Directive No. 20. According to MKN (2012), during the current disaster management involves a

number of rescue agencies on the scene as the Special Search and Rescue Team Malaysia (SMART), the Royal Malaysian Police (PDRM), Malaysian Fire and Rescue Department (BOMBA), Malaysian Armed Forces (ATM) and the Civil Defenses Department (JPAM). Next, the management of flood victims after evacuees are the responsibility of the Social Welfare Department (JKM), People's Volunteer Corps (RELA), the Malaysian Red Crescent (BSMM), and the Ministry of Health (KKM). After the season evacuated, some agencies will take over the task of providing assistance in terms of material and spiritual. Among these agencies the Social Welfare Department (JKM) was helped by the support of agencies such as the JPAM, RELA and BSMM in which their role is based on Directive No. 20 namely preparing and organizing the evacuation centers for disaster victims (MKN, 2012). After the disaster, some short and long-term recovery will be continued by the JKM to help victims resume their lives. The department will distribute the short-term relief such as food and beverages in the early stages for several days. Meanwhile, for long-term assistance was in the form of "*Bantuan Wang Ehsan"* and *"Bantuan Pemulihan"* (by JKM) based on permission of National Disaster Committee (JPBP) and the State Disaster Management Committee (PBT). *"Bantuan Pemulihan"* provided to disaster victims who have not received assistance Wang Ehsan (JKM, 2013/2014).

However, for resettlement after the disaster, the government did not set out in Directive 20 is the type of house that will be obtained by the victim. This is because, construction or domestic help after disasters will be discussed by the higher authorities for further action. Therefore, this study will help to address issues relating to the during and post-disaster is often a problem in disaster management in Malaysia.

3. Literature Review

3.1. Issues on during disaster relief operation

A natural disaster occurs when an extreme geological, meteorological, or hydrological event exceeds the ability of a community to cope with that event. The purpose of a humanitarian relief is to provide the appropriate emergency supplies to people affected by natural and man-made disasters to minimize human suffering and death. The distribution system used in humanitarian relief operations may depend on each situation's. The problems that arise during of disaster relief operations may differ depending on the various factors, such as the type, impact, and location of the disaster occurs, and local conditions in the regions affected (Balcik, Beamon, & Smilowitz, 2008).

As a consequence of the rise in the number and impact of man-mad or natural disasters, the need of disaster relief, humanitarian aid provided during disasters, is expected to continue and will be increase. The inability of humanitarian relief organizations to properly scale capacity to face of increasing needs on that time, although has led to a generalized scarcity of resources and the intense pressure to improve operational efficiency of disaster relief efforts (Thomas, & Kopczak, 2005). The humanitarian relief organizations today has resources thinly stretched among the simultaneous operations in different theatres around the world. In addition, increasingly demanding donors pressing for better results and data demonstrating impact of aid to those in need has subjected relief organizations to greater scrutiny, leading to further pressure toward operational transparency and results orientation (Thomas, &

Kopczak, 2005). At this point, the victim is transferred to evacuation centers that have been established by the government. Therefore, at this stage, they expect help from the government to reduce the suffering and the burden faced by the victim. Based on the findings Said et al. (2013), researchers have proven that there are issues that arise in the distribution of disaster relief. Besides that, the assistance provided to victims is irregular, inadequate support and assistance is also slow. Issues and problems have caused conflict in there.

In addition, Said et, al. (2013) also revealed that there has been significant dissatisfaction with management is not systematically implemented by the JKM, MKN and the District Office because lack of rescue equipment and an evacuation center do not comfort for the victims. The perception and complaints of the victim should be taken by the government in order to serve as a guide for improving the distribution of aid operations in the future.

3.2. Issues on post-disaster relief operation

Disaster recovery has three distinct but has the interrelated meanings. First, it is a goal that involves the restoration of normal community activities that were disrupted by disaster impacts in most of people's minds, exactly as they were before the disaster struck. Second, it is a phase in emergency management cycle that begins with the stabilization of disaster conditions and ends when the community has returned to its normal routines. Third, it is a process by which the community achieves the goal of returning to the normal routines. The recovery process involves both activities that were planned before disaster impact and those that were improvised after the disaster impact (Lindell, 2011).

According to Badri, Asgary, Eftekhari, and Levy (2006), the formation of post-disaster policy is more important as the victims urgently need help from the government to provide temporary and implement disaster recovery measures for improving the welfare and victims quality of life after a disaster. Review of policy support after the disaster in Malaysia have come forward by Chan (1995) in which he stated that resettlement after floods should be evaluated in order to be implemented for future improvements. Moreover, Roosli (2010) also stated that the policies after the disaster, there are still shortcomings in terms of misunderstanding implementing policies enacted by the government led to disaster management becomes ineffective. This is because in the Directive No.20, was not clearly established the type of placement will be given to the victims and this has led to the restoration project need to be discussed by the higher authorities and its requires a long time due. Moreover, previous researchers also assumed that community involvement in the planning and formulation of policies is necessary for a person to realize their human potential and would make the implementation of a more comprehensive assistance (Wehn, Rusca, Evers, & Lanfranchi, 2014; Kweit, & Kweit, 2007; Godschalk, Brody, & Burby, 2003). Therefore, the bottom-up theory used by previous researchers to identify the effectiveness of aid during and after the stage from the perspective of the victims themselves.

3.3. Bottom-up Theory

Bottom-up theory developed aims to encourage a process of public participation in every aspect of policy formation and evaluation. This theory was developed by Hanf, Hjern and Porter in 1978, which

emphasizes the involvement of local, regional and central planning, financing and implementation of government programs and non-governmental. Based on the Sabatier (1986), this theory will provide a decision-making mechanism, starting with local authorities, and decision-makers such as teachers and doctors to policy makers at the highest levels in either the public or private sector. Bottom-up approach is used to assess and develop policies that come from the efforts of the subordinate, the individual or of the people's problems itself (Howlett, Ramesh, & Perl, 2003).

In fact, this approach starts from the grassroots to support the implementation of the policy and strategy because without the support of the executive, operational implementation of the policy would be inefficient (Nevill, 2004). Quarantelli (1991) has also suggested that policy makers should seek the views of the executive and the community to analyse and make plans for disaster relief in the future in line with the philosophy of designing for people not to the government. Most governments still do not take cognizance of the people views of assistance provided, whether successful or not policies are implemented (Hofmann, Roberts, Shoham, & Harvey, 2004).

Roosli and O,Brien (2011), in a study related to the flooding in Malaysia policies has stated that the policies were formed in Malaysia for flood disaster management is based on the top-down theory is failed to meet the demands of the victims. Even Chan (2012) in studies on flood risk management was also argued that using the top-down theory, which developed and implemented the policy does not become effective because the government will only act after a disaster occurs without preparing in advance to take the perception of the community related policy really necessary. This is because the policy is established based on top-down theory is not effective and should be changed to a bottom-up theory to get a perception of the victim itself about policy implementation and implications of the disaster to them.

According to this theory, the detailed information regarding the needs of victims can be obtained from the grassroots based on the perceptions and complaints from the victims themselves. In addition, it can be assumed that making a decision to carry out the distribution of disaster relief and post-disaster stage will be more effective and comprehensive approach is bottom-up.

4. Discussion and Conclusion

In Malaysia, flood disaster phenomenon become more increase and give the impact to the victims in the flood prone areas. Disaster management in Malaysia is based on Directive No. 20 already has a disaster preparedness at the stage before, during and after disasters. Based on that, it appears that this Directive has listed the duties and responsibilities that must be carried out by the executors for each level whether from the government or private sector. However, based on previous studies, presented findings that showed that there are still has a problem and issues arising for the stage during and after disasters involving floods victims in Malaysia (Chan, 2012; Roosli & O,Brien, 2011). In fact, disaster relief policies are unsatisfactory in terms of assessing the effectiveness of its implementation to obtain the perception of the victim itself. In this study show that in Malaysia, a study concerning the evaluation of the effectiveness of policy implementation at levels during and post-disaster that affect the flood victims were poorly implemented. Because of that, this study also suggest to fill the gaps and

can contributes to a better understanding about what the weakness of during and post-disaster management in floods disaster.

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