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# Examining of Issues on Flood Disaster Management in Malaysia

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## ABSTRACT

Flooding in Malaysia has made various impacts to the victims in terms of damage to property and loss of life. Besides that, the victims also suffer after flood disaster occur. Because of that, the purpose of this paper is to describe the issues and problem of disaster relief management provided by government to the victims in Malaysia for phases during and post-disaster caused by flooding. Presently, the disaster management in Malaysia including flood almost based on top-down approach that was predominantly an official strategy from Directive No. 20 by National Security Council of Malaysia. These instructions outline has set the role and responsibilities of the agencies involved and also covers the action of monitoring the activities in disaster management. Therefore, this paper presents findings from the literature review by previous research in this topic. The result show that, in Malaysia, a study concerning the evaluation of the effectiveness 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 management for phases during and post-disaster that has been criticized by previous researchers.

**Keywords:** Disaster Management, Flood Relief, Flood Victim

**JEL Classifications:** H530, I38, I380

## 1. INTRODUCTION

Malaysia is the developing country that also facing a natural disaster in recent years such as flood. Flooding is a natural disaster that dominated from the 1880s until now that was affected various population in Malaysia. In fact, flooding achieve 40-50% of all types of disasters causing deaths in the world (Diaz, 2004; FitzGerald et al., 2010). In accordance flooding is also a natural disaster caused by climate factors such as rainfall, temperature, evaporation, wind and movement of natural conditions on earth (Balek, 1983).

Based on the National Security Council (MKN), disaster management has classified into three main stages such as pre-disaster, during and post-disaster to ensure a more holistic management. Unfortunately, according to McEntire (1999) and Altay (2008), the humanitarian assistance for stage during and post-disaster responses has witnessed a decline over last few decades. Because of that, there need evaluation for examining the successes and failures of the recent relief operation. The

victims that was affected by major of losses expect they 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 by the government.

## 2. DISASTER MANAGEMENT IN MALAYSIA

### 2.1. Phases of Disaster Management in Malaysia Including Floods

According to MKN, disaster management in Malaysia is not focused on a specific type of disaster. This is because every policy issued is applicable to all types of disasters, including floods. On May 11, 1997, the Directive No. 20 which contains the Policy and Mechanism of the National Disaster Management and Relief has developed. After that, the MKN have updated that Directive No. 20 in 2012 for been revised to confirm with the current changes, as well as the complexity of disasters is often the case at present.

These instructions has 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 (Hussaini, 2007).

Earlier experience has shown that the most effective approach is through the development of flood management programs using a holistic approach with respect to the following under five strategies:

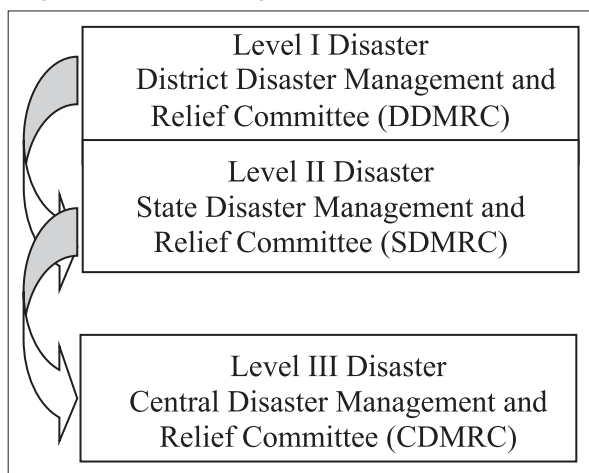
1. Prevention - Avoiding construction of properties, houses, and industries in present and future flood prone areas;
2. Protection - Reduce the likelihood and the impact of floods in a specific location, using structural and non-structural measures;
3. Preparedness - Give information to the public, what need to do in the event of flooding and about the risks;
4. Emergency actions - Develops the emergency response, formulate plans and the actions need to take;
5. Recovery and lessons learned - Return to normal after flooding disaster conditions as soon as possible and mitigate both social and the economic impact.

Disaster management in Malaysia have been placed under the Disaster Management and Relief Committee was formed consisting at the central, state and district levels to manage disaster on each in order to become more effective. Therefore, the MKN will lead agency for disaster management in the country where the MKN has the responsibility to coordinate, establish and ensure the policies and the disaster management mechanism are observed and implemented at all levels based on Directive No. 20 guidelines. The disaster management committees are run based on three levels, namely, the central committee, state committee and district level committees as shown below (Figure 1).

## 2.2. Flood Forecasting and Warning System

Management for this phases is based on the Standard Operating Procedure as determined by the NSC to agencies like Department of Irrigation and Drainage (DID), Public Works Departments (JKR), Department of Meteorology and Local Authorities includes two steps, namely, structured and unstructured. Structural measures adopted in Malaysia are like dams and dykes to control flood flows. Meanwhile, non-structural measures is such as land use planning and flood forecasting and warning systems to mitigate the effects

**Figure 1:** Disaster Management Committees (MKN, 2012)



of floods (Chan, 2012; Khalid and Shafiai, 2015). This two steps measures was implemented to reduce the danger of flooding and will reduce a greater hazard to people in the flood plain.

The agencies involved in disaster management of unstructured is the Malaysian Meteorological Department (JMM), JKR and DID (MKN, 2012). Flood warning systems in major rivers that often suffer severe flood disaster has been reviewed in 1971. 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 by the responsibilities agencies (JPS, 2013).

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

Malaysia also has introduced “Manual Saliran Mesra Alam” in 2001 to be used as a tool in integrated flood management (Chan, 2012; Musa et al., 2013). In contrast, an example of which is seen nonstructural methods are effective flood forecasting and warning system (JPS, 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.

## 2.3. Flood Relief Management

Management of flood victims during and after the flooding situation in Malaysia also is based on Directive No. 20 that was developed by MKN. During the current disaster management involves a number of rescue agencies on the scene as the Special Search and Rescue Team Malaysia, the Royal Malaysian Police, Malaysian Fire and Rescue Department, Malaysian Armed Forces and the Civil Defenses Department (JPAM) (MKN, 2012). Besides that, 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.

After the season evacuated, some agencies will take over the task of providing assistance in terms of material and spiritual to reduce the victim’s trauma and burden. Among these agencies, the 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 and the State Disaster Management Committee. “*Bantuan Pemulihan*” provided to disaster victims who have not received assistance “*Wang Ehsan*” to help them reduce the burden because of the disaster damage. The types of relief assistance to the victims as a shown in the Table 1 (JKM, 2013/2014).

However, for resettlement after the disaster, the government did not set out in Directive 20 the type of house or the others types of relief that will be obtained by the victims that suffer with property and house damage. This is because, construction or domestic help after disasters will be discussed by the higher authorities for further action. Because of that, the victims need to stay at the evacuation center for a long time. Therefore, this study will help to address issues relating relief assistance management to victims during and post-disaster is often a problem in disaster management in Malaysia.

### 3. PREVIOUS RESEARCH ON ISSUES OF FLOOD RELIEF MANAGEMENT

For the purpose of this study, this paper present findings from literature review by previous research in this topic. In case of floods, the findings obtained from previous researchers has 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 made a policy as the preparation for the future (Chan and Parker, 1996; Chan, 2012). Although Malaysia has implemented various policies for the all stage, but the policies implemented are identified still has some problems and issues for the stage during and post-disaster in terms of the assistance implementation and rehabilitation projects for the victims (Chan, 2012; Mohd Zulhafiz et al., 2013; Zaiton

**Table 1: Relief assistance for post-disaster victims by JKM (JKM, 2013/2014)**

Relief types	Total (RM)
School assistance	The maximum amount is RM50.00 for school equipment were destroyed and the maximum amount of RM70.00 for school uniforms for one students
Clothes	The maximum amount is RM70.00 for one person
Family assistance	The maximum amount is RM40.00 for one person
Assistance for household needs	The maximum amount is RM100.00 for one families
Assistance for house repairing	The maximum amount is RM2500.00
Assistance for small traders capital not exceeding RM5000	The maximum amount is RM3000.00
The maximum assistance per family is RM5000.00	

et al., 2013) which has affected the victims quality of life, and suggested that an evaluation of that policy should be implemented (Roosli, 2010).

#### 3.1. Poor Disaster Relief Management at the Evacuation Center

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 et al., 2008).

As a consequence of the rise in the number and impact of man-made 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 and Koczak, 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 and Koczak, 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 by Mohd Zulhafiz 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, Mohd Zulhafiz 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. This statement also proven by Mohd Zulhafiz et al. (2013) based on their research findings of flood relief management at District of Padang Terap, Kedah Malaysia show that flood relief center are due to insufficient food supply, lack of understanding between the victims, overcrowded and insufficient and unsuitable infrastructure and equipment at the center make the conflict exist. Besides that, their research finding also found that the evacuation center is not properly managed and maintained by the responsibilities agency and the center is not ready for using during flooding disaster. Because of that, 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. Lack of the Utilities and Slow Recovery Policy

Nevertheless, lack of the utilities during the flooding is the one of the important issues were list out by previous researchers. According to Mohd Zulhafiz et al. (2013), all the victims agreed that the all utilities at evacuation center is not maintained and properly managed. Because of that, it is not suitable for the victim as a place to stay for a long time until temporary or permanent house are built.

After disaster, the recovery is the most important phases to help victims build a new life and decrease their suffer after destruction by disaster. 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 et al. (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.

Because of that, the victims need to stay at the evacuation center or stay at their relatives house for a long time. This situation make them not comfortable and will affected their quality of life.

### 3.3. The Attitude of Flood Victims and Lack of Community Involvement

The attitudes of flood victims during the flooding events is mostly change because of flood impact. They will pressure and perceived negative attitude like selfish and just thinking about their own necessity. This finding was proven by Roosli and O'Brien (2011), were they found that the negative attitudes of flood victims make the relief management be more difficulties and the victims expect government will give the relief on time while when the number

of victims may increase, the management has not enough staff to handle the situation.

Based on that finding, it can see that the educating community is very important to face disaster events in the future including floods. This is because, community especially victims will change their attitudes to be more rational and can considerate with others at evacuation centers in that situation. Therefore, the government need to take action with involving the community in policy or programs planning and implementation.

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 (Godschalk et al., 2003; Kweit and Kweit, 2007; Wehn et al., 2014). But in Malaysia, community cannot contribute the ideas directly because the government will take the action from policy develop until policy implementation.

Therefore, the previous researchers propose that the future researcher need to using bottom-up theory to identify the effectiveness of aid during and after the stage from the perspective of the victims themselves. This is because, the involving community in disaster management will reduce the government burden and community will contribute to help the victims. According to Roosli and O'Brien (2011) and also Chan (2012) the top-down approach cannot be used in flood relief management in Malaysia because it not given the successful implementation in holistic manner.

## 4. IMPORTANT OF BOTTOM-UP THEORY

The bottom-up theory was developed to aims encourage a process of public participation in every aspect of policy formation and evaluation. This theory was developed by Hanf et al. 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 et al., 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 analyze 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 et al., 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.

## 5. DISCUSSION AND CONCLUSION

In Malaysia, flood disaster phenomenon become more increase and give the impact to the victims in the flood prone areas in recent years. 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 and O'Brien, 2011). Even though the Directive No. 20 was established by government for phases pre-disaster, during and post-disaster, but when it became the real situation, the Directive cannot implement well. Because of that, disaster management in Malaysia was criticized by the previous researcher and also the victims was suffer because of that weakness.

As the conclusion, the government should identify the weakness in disaster relief for preparation in the future to make the disaster management for phases before, during and after disaster especially flood will be more effective.

## 6. RECOMMENDATIONS

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. The most important issues that was listing by previous researchers is about the government

need to upgrade the relief center and educate the flood victims to involve in government planning policy and programs.

The evacuation centers is very important place when disaster occurs because all the victims will moved there. Because of that, government needs to upgrade the facilities and utilities for proper equipment for use during flooding. Furthermore, the government also needs to implement a comprehensive maintenance at the relief center for short and long term disaster planning.

The others recommendation is about educate the flood victims to involve with government planning. So that, the government can take the action based on community or victims opinions and government will know the real needs of victims during flooding. Besides that, it can reduce the government burden because the community will know their responsibilities and what the action they need to do during flooding. Other than that, the victims also can change their attitude at relief centers to be more tolerate and help each other.

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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