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# NEW MODEL ON DISASTER PREPAREDNESS

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## **NEW Model on Disaster Preparedness**

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### **ABSTRACT**

The study investigated the survivors' learning experience from the tsunami in Aceh 2004. It examined the learning experience of the survivors based on six areas, namely their capabilities, their limitations of handling the disaster, the challenges faced in terms of leadership, how resources were effectively mobilized, public awareness and education, and community self-reliance. The SWOT analysis was conducted to recognize the unique learning experiences. Eventually, a model on disaster preparedness was proposed. The paper aims to highlight the new model on disaster preparedness. Seven key informants were identified for the study. Additionally, a total of 103 respondents took part in the interviews and 450 participated in the survey. It was also found that preparedness is most significant to reduce loss and damage in any disaster. The study suggested the framework for developing and building up preparedness programs and activities. Disaster cannot be prevented but preparedness is found to be the key of the most possible strategies. There is an urgent and strong need to educate people at risk of natural disaster.

**Key words:** Disaster, preparedness, tsunami, learning experience and Aceh

### **Introduction**

On December 26, 2004, the regions along the Indian Ocean coastline experienced what was the most destructive earthquake that struck off the northern coast of Aceh on the Island of Sumatra, Indonesia. Close to 230,000 people were killed, 500,000 were left homeless,

infrastructure was crippled, and hundreds and thousands of buildings were destroyed (BRR Report, 2005).

The tsunami took hundreds of thousands of lives and destroyed everything in its path. Many people lost their homes. The Acehnese went into the hard years of the recovery process. The journey ahead was long and hard. It was resilience and courage that transformed the survivors. The Acehnese had taken dramatically different paths in the aftermath of the disaster.

### **Preparedness in Disasters**

Preparedness and planning at the community or village level are key components of the total national effort for coping with disaster (Carter, 1994; Mercy Malaysia, 2005). Experience has shown that human and material resources in villages and community are vital to an effective national response to disaster. Moreover, Aceh consists of scattered and remote communities; therefore, it is necessary to plan a national counter-disaster strategy based on an understanding of community or village level disaster response capabilities. Mercy (2005) reports that the most important lesson learned from the tsunami has been preparedness. In addition to working toward earlier warning and disaster alerts, Save the Children (2009) has focused on educating both children and adults on emergency readiness.

This includes teaching children to map their communities, recognize danger-prone areas and plan escape routes. It means instructing adults to prepare a package of important identification documents they would need to take if evacuated. The group is also working with community leaders to plan and prepare for the worst should disaster strike again.

In this study, a set of emerging lessons has been identified. Several lessons and priorities are reflected throughout this report. Nevertheless, the significant learning experiences among the survivors are highlighted in the conceptual framework. During the investigation, respondents were required to provide opinions upon the significant events based on the six components namely, significant learning, coping strategies, involvement, possible actions, lessons learnt and spiritual sustenance.

### **The Research**

This study was carried out in the context of a joint research undertaken by the Office of Governor of Aceh and Universiti Pendidikan Sultan Idris (UPSI) in Malaysia. The study aims at investigating the learning experience of the survivors after a decade. In June 2012, this collaborative research between UPSI and Aceh was initiated and a team of researchers embarked on the study. The questionnaire was largely based on the qualitative results collected at the first phase of the study. Specifically, the paper presents the results based on the main objectives of the study, which are:

1. What were the learning experiences among the survivors of the tsunami?
2. What were the capabilities of the survivors?
3. What were some of the limitations of handling the disaster?
4. What were the challenges faced in terms of leadership during the tsunami?
5. How was public awareness being enhanced?
6. How resources were effectively mobilized after the tsunami?
7. What were the future plans for preparedness?

### **Conceptual Framework**

Based on the literature review, a conceptual framework is produced to facilitate in the data collection. The framework is made up of three major components: 1) learning experiences of

the survivors of the tsunami; 2) Capabilities; 3) limitations Service leaders; 4) leadership issues; 5) public awareness and education; 6) mobilization of resources. Finally, assuming that that these domains are significant is significant, the research investigates how preparedness can be adopt as a strategy to reduce loss and damage from a disaster. It is indeed apt and timely to propose a comprehensive and sustainable model to further design programs and activities for disaster preparation.

### **Methods and Sample**

The study employed a mixed-method design in soliciting qualitative and quantitative data. It was envisaged that the mixed-method design would provide richer data and in-depth views of the participants 'experiences. This approach consists of procedure in collecting, analysing and integrating both quantitative and qualitative data during certain stages of the research process with a single study (Creswell, 2009). The first phase consisted of the collection and analysis of qualitative data. The qualitative results were obtained from interviews with seven key informants. All the respondents were asked the same set of semi-structured questions.

In this context, the data obtained from all the participants were collectively analysed to uncover common themes and sub-themes on the learning experience of the survivors in Aceh after the tsunami. The data analysis involved three phases. The first phase was the analysis of qualitative data in terms of interviews, observational notes and documents amongst the participants. All taped interviews were transcribed. The qualitative data were content analysed case by case, using inductive and deductive analysis. Data reduction was then conducted to identify common themes and sub-themes in all thirteen cases. The paper aims to highlight the new model on disaster preparedness. It is one of the holistic integration of the six domains. The paper elaborates on elements of each domain based on the six areas presented. In sum, the study concludes that the model based on the themes obtained help individuals to enlarge their worldview, transform plans for future disaster management and enhance awareness towards disasters.

### **Findings**

The findings suggested that the capabilities of the survivors embedded in their local knowledge, their use of the extended system, their survival experience from the past and their understanding of the hierarchical system. It was revealed from the findings, effective leadership have great impact on reducing damage of a disaster. Thus, the four elements of integrated intelligence of the qualities of "servant leaders" are recommended for leadership development. In order to mobilize resources effectively, it was found, time factor and the condition of the equipment were the major concern. It is reported that there is lack of promotion of public awareness and education for disaster. The findings show evidence that development of community self-reliance involves a balance between traditional self-reliance and obligations of the government. Last but not least, preparedness is found to be the key of the most possible strategies. There is an urgent and strong need to educate people at risk of natural disaster.

The new model on Disaster Preparedness was derived from the study investigated the survivors' learning experience from the tsunami in Aceh 2004. It examined the learning experiences of the survivors based on six areas, namely their capabilities, their limitations of handling the disaster, the challenges faced in terms of leadership, how resources were effectively mobilized during and after the tsunami, public awareness and education, and

community self-reliance. The SWOT analysis was conducted to recognize the unique learning experiences. Eventually, a model on disaster preparedness was proposed.

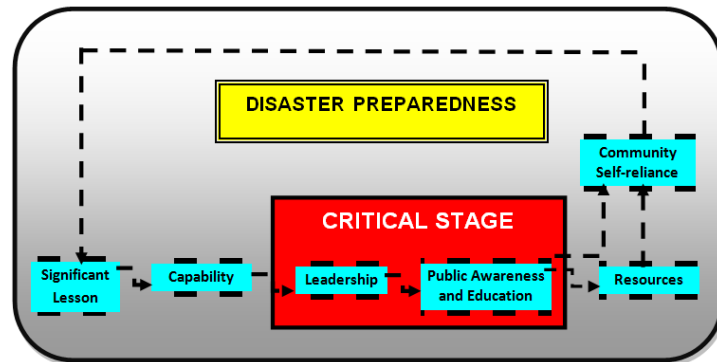


Figure 1: The new model on disaster preparedness

This model informs the impacts of natural disasters and we are reminded that, it is not so much awareness in what we know, but being prepared in what to be done that depicts the actions and wisdom towards an unpredictable event (Jane at al. 2013). The six domains delineate a combination of actions that demonstrate survivors had gained insights based on their learning experiences. While the model accounts for the domains outlined by Carter, Counter-Disaster Organizational Structure, there is a dynamic interaction of interactive, circle embedded within the six domains. The multiple dimensions of the model reveals a complexity in this setting that demonstrates capabilities, resources, leadership, education and self-reliance. The conclusions allow us to not only consider how their learning might be conceptualized as elements of a preparedness program by itself, but also explored how it might be otherwise useful in other settings of natural disasters.

The Model which serves as the framework of developing preparedness programs for natural disaster, a module of developing programs had been designed. The module consists of thirty lessons. It contains the six core domains participants need to be successful throughout the comprehensive training program. Participants will be provided awareness and also their responsibilities from the individual level to the international involvement. The module of training program is illustrated in a matrix.

	Lessons learnt	Capability	Leadership	Educational Programs & Public Awareness	Resources	Community Self-reliance
INDIVIDUALS	More vary of disaster	Local knowledge	EQ	Curriculum: Selected Subjects	Effective utilization	Be accountable
INFLUENCE OTHERS	Enhance environmental protection	Survival experiences	Moral Intelligence	Co-curriculum	Preservation	Reduced dependency
LOCAL LEADERS/ SOCIETY	Develop life skills	Inherent capability	Social Intelligence	Community Engagemens	Monitoring	Recognize coping mechanisms
GOVERNMENT/ NATION	Increased knowledge of self	Hierarchical System benefits	Spiritual Intelligence	NGOs	Mobilizing/ Inspection	Effective communication
INTERNATIONAL	Engaged society	Local wisdom	Trained leaders	International Collaborations	Evaluation	Effective local leadership

Figure 1: Modules of Programs for Disaster Preparedness

Within the matrix are 30 preparedness lessons that deal with the specific issues participants face while preparing or facing a disaster. In brief, the first level of accountability arises

within the self or individuals. Obviously, an individual has to enhance their knowledge and awareness towards the happening of disaster. In order to influence others, each individual must serve as an example to those who put trust in them. Awareness and responsibility starts with ourselves. Then, the biggest role of us or everyone is able to move people in a certain direction through mission, vision and values. Next, a person's noblest cause is having the opportunity to create awareness within the community of the impacts of disasters.

## **Conclusion**

The study sought to explore the components to form the domains of a disaster preparedness projects. Thus, a model had been established. It is a model pertaining to the notion of disaster preparedness. It is an innovative, comprehensive and sustainable model pertaining to the notion of disaster preparedness. The model is the catalyst to enhance preparedness programs for disaster as it provides the framework towards designing disaster preparedness programs and activities. It serves as the basis for disaster preparedness in curriculum, co-curriculum and community engagement projects. Specifically, the model informs the types of programs and activities can be further designed under each domain. Especially, the learning experience from the tsunami in Aceh and the lesson learnt had significantly captured. The model provides guidelines for preparedness programs in Aceh or even many vulnerable countries in the world. The findings add to the growing body of research on disaster specifically around the theme of disaster preparedness for any natural disaster. Future research is needed to expand the programs and projects based on the domain of the model of disaster preparedness.

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