

Disaster Management in Malaysia: Evolution, Development and Future Challenges

By: Aini Mat Said (UPM) and Fakhru-Razi Ahmadun (UPM)

1. INTRODUCTION

Since independence, the nation has progressed and developed at an unprecedented rate and has transformed herself from an agrarian to an industrialised nation. Corollary to the industrialisation, disasters associated with development and technology became more apparent. Malaysia has experienced various magnitudes of disasters ranging from biological, structural collapse, fires and explosions, landslides and meteorological incidents. A list of notable disasters in Malaysia is shown in Table 1. Valuable lessons were learned from past disasters and they had greatly influenced the evolution of safety and disaster management in the country. Some of these were land-marked disasters where various regulations, acts, and laws were amended or introduced, and formation of specialised functional bodies.

2. EVOLUTION OF NATIONAL DISASTER MANAGEMENT

The first major disaster that could be linked with the development of the country was the collapse of a four storey building in 1968. The ensuing Royal Commission of Enquiry found the then-existing Kuala Lumpur Municipal Building By-laws to be out dated and recommended the formulation of a uniform building by-law throughout the country in order to meet the changing needs of the construction industry. The fire and explosion of the Bright Sparklers Fireworks factory in Sungai Buloh, Selangor, in May 1991 was one of the worst chemical disasters in the country. The tragedy and the subsequent explosion of another fireworks factory in Beranang, Selangor, in 1992 resulted in the policy made by the government to ban establishment of fireworks factories in the country. Many shortcomings on the emergency response procedures and co-ordination were noted during the

rescue operations of the disaster. From the incident, it was realised that the emergency responders were not trained and equipped to handle disasters involving hazardous materials. This set up an impetus for the formation of HAZMAT teams in the Fire and Rescue Services Department, Malaysia.

Subsequently, the whole nation was taken by surprise and stunned by the collapsed of the luxury condominium of Highland Towers on 11 December 1993. Block 1 of the three 12 storey high apartments collapsed after 10 days of continuous rainfall. After 8 days of frantic searching, 48 people were recorded dead. The disaster had caught international attention and emergency response teams from Japan, France and Singapore came to offer their help but were hampered by the absence of a pre-agreed Emergency Response Plan (Soh, 1998). Similar problems were already noted when responding to other major disasters in the country such as the fire and explosion of Bright Sparklers in 1991 and the explosion of Choon Hong III ship at the Port of Klang in 1992. However only after this incident, was the government prompted to review the existing provisions for disaster management and instituted a new mechanism for disaster relief and management. Following the Highland Towers incident too, the noticeable lack of local expertise in specialised rescue operations led to the formation of the Special Malaysia Disaster Assistance and Rescue Team (SMART) on 1 August 1995. Its function is to aid the rescue operations and their responsibilities and scope are specifically mentioned in the

National Security Council Directive 19 (Aini, et al., 2001).

The Inland Major Disaster Management Mechanism, under the National Security Council of the Prime Minister's Department, was formulated in May 1994 to coordinate all emergency agencies and handle relief activities during any major on-land disaster incident. The policy statement for disaster relief operations is entitled the National Security Council Directive 20, which took effect on 11 May 1997. The main purpose of the Directive 20 is to put in place a comprehensive emergency management program which seeks to mitigate the effects of various hazards, to prepare for measures which will preserve life and minimise damage to the environment, to respond

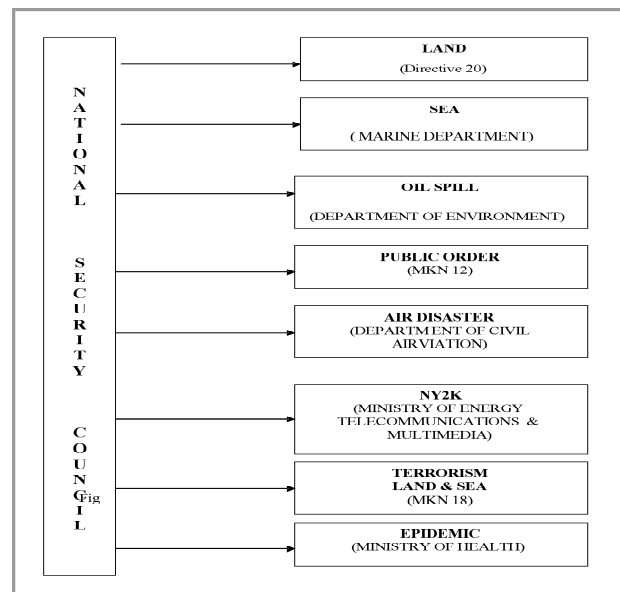


Figure 1: National crisis and disaster management mechanism

during emergencies and provide assistance, and to establish a recovery system to ensure the affected community return to normalcy. Among the types of disaster incidents that are covered under the Directive 20 are: natural disasters such as floods, storms, drought, mud-slides etc; major industrial accidents such as fire and explosion; collapse of buildings, railway accidents;

nuclear accidents, aviation accidents that occur on residential or build-up areas; and extensive haze condition that resulted in environmental stress and affect public order (Directive 20, 1997). The national crisis and disaster management mechanism is as shown in Figure 1.

The tsunami disaster on 26 December 2004 had caught Malaysians unprepared for such a disaster. It is one of the most deadly dates in modern history where more than 288,000 people in a dozen of countries including Malaysia died as a result of the Sumatra earthquake and the resulting tsunami (Collins, 2006). The resulting tsunami affected a 200 kilometer coastline from Perlis to Selangor, caused 68 death, 6 declared missing, 91 hospitalised and 276 were treated as out-patients and 10, 564 people evacuated. Malaysia was stunned by the after effects of the earthquake, trapped by ignorance of tsunami and no single warning issued by the authorities to minimise the impact of the disaster. Nevertheless, the activation of National Security Directive No. 20 at state level followed by National Level a few hours after that has resulted in a systematic and coordinated approach to rescue and relief effort to the affected places. The incident was very significant although the death toll was very much less compared to its neighbouring countries as it was the first experience that Malaysia ever encountered such a natural disaster. Despite a lag of almost three hours between the earthquake and the impact of the first tsunami on the shores of Langkawi, all the victims and the authorities were taken completely by surprise. Most of the victims might have been able to evacuate safely had they received sufficient warning from the authority. This experience has led to various prevention and mitigation measures against future tsunami disaster being put in place and some are in the pipeline by the government. On the 26th of December 2005, the National Security Division of the Prime Minister Department of Malaysia launched a Disaster Awareness Day which was officiated by the Deputy Prime Minister of Malaysia. The national disaster awareness day will be commemorated

every year on 26th December. It signals the beginning of a national effort to raise public awareness and education on disaster.

3. CHALLENGES

Disasters evolved from complex systems and this complexity is increasing as the world is transformed into one entity through globalisation. They also reflect societal ways of doing business, thus they are evolving rapidly in response to major changes on our society. They therefore mutates in form, in response to population growth and urbanisation, economic growth, globalisation of commerce, technology advancement and other trends now underway worldwide (Hooke, 2000; Picau, et al., 2004). Scholars on disaster studies have envisaged that future disasters will have these characteristics and features (Turner & Pidgeon, 1997; Rosenthal, 1998; and Hooke, 2000):

- **Transnationalisation**

The original source of the problems at hand may continue to be local or national, but the immediate and long term impact of disasters and crises to come may span countries and continents;

e.g. Technological disasters (Chernobyl disaster 1986; Sandoz Chemical in Basel 1986), Biological disasters (Severe Acute Respiratory Syndrome in April 2003; and Avian influenza in 2004) and environmental disasters (Forest fire and the resulting haze emergency in 1997) where the impacts were either regional or international.

- **'Mediasation'**

Subjective notion of disaster can be summarised in a version of the Thomas Theorem:

"If the media defines a situation as a disaster or a crisis, be sure that it will indeed be a disaster or a crisis in all its consequences"

- 'Mediasation' will be one of the driving forces in the world of future disasters.
- Outright sensationalism to self-imposed censorship.
- Put pressure on the decision makers to explain and justify to the public.

- **Compound Disasters**

A disaster evolved into a totally different category of disaster/crisis
e.g. Amsterdam air crash of October 1992

- **Mutation of Disasters**

- Mutating in form, in response to population growth and urbanisation, economic growth, globalisation of commerce, and technological advancement
- The 'disaster reduction' that can barely keep in pace

- **Changing Loss Profiles**

Despite the major population growth, loss of lives has dropped but there is an increase in property losses and indirect economic losses i.e. losses such as business disruptions in becoming major societal vulnerability

- **Globalisation Effects of Disasters**

e.g. The Kobe earthquake affected a large fraction of Japanese shipping that forced closures of subcontractors' facilities worldwide, even in the U.S.

- **Newly Emerging Hazards (Global Scale)/ Creeping Disasters**

Reconceptualisation of the notion of sudden onset of disasters - e.g. deforestation, losses of ozone, global warming, and rise of sea-level; span many decades to develop and bursting into a disaster; e.g. global warming; ozone depletion; etc. where the incubation period can be very long, even decades.

- **Mega Disasters**

Emergence of Mega Cities, Mega Carriers/Transport, Mega Structures which will lead to mega disasters.

- **Unprecedented Technological Advances**

Disasters are evolving rapidly in response to scientific advancement but engineering practice may not be keeping in pace

- Uncertainty in estimating losses
- Inability of using new scientific and technological advances to mitigate disasters
- Hydrometeorological hazards are not forecastable on an extended

Table 1: List of notable disasters in Malaysia

Date	Disaster	Casualties
19 October 1968	**Collapse of 4-Storey Building, K.L	7 Dead 11 Injured
January 1971	Monsoon flood spilled over to West Coast of West Malaysia	24 Dead National Emergency Declared
31 July 1988	**Collapse of Sultan Abdul Halim Jetty, Butterworth, Penang	32 Dead 1 674 Injured
22 September 1989	**Fire at Sek. Agama Rakyat Taufiqiah Khairiah Al-Halimiah, Yan, Kedah	27 Dead 6 Injured
7 May 1991	**Fire and Explosion of Bright Sparklers Fireworks Factory, Sg. Buloh, Selangor.	22 Dead 103 Injured
5 April 1992	Fire at Sultan Abdul Aziz Shah International Airport, Subang, Selangor.	3 Dead
20 Jun 1992	*Choon Hong III Ship, Explosion and Fire, Port Klang, Selangor.	10 Dead
11 Dec 1993	*Collapse of Highland Towers Condominium, Hulu Klang, Selangor.	48 Dead
4-7 Dec 1994	Landslides in Cameron Highlands	7 Dead
30 Jun 1995	Landslide, off Genting Highland Road, Pahang.	20 Dead 22 Injured
15 July 1996	Tourist Bus Accident, landslide at Km 15, Genting Highland, Pahang.	17 Dead
29 August 1996	Mudslide at the Aborigines' Village in Pos Dipang, Kampar, Perak	44 Dead 30 Homes Destroyed
26 December 1996	Tropical Storm GREG (Typhoon), Keningau, West Coast of Sabah	230 Dead 4925 Homes Damaged.
1-30 April 1997	Enteroviral Outbreak, Sibul, Sarawak.	25 Dead
July- October 1997	Country Wide Haze in Malaysia And Haze Emergency in Sarawak	Environmental Damage, Health Problems & Economic Losses
24 December 1997	Fire and Explosion, Shell SMDS, Bintulu, Sarawak.	12 Minor Injuries Extensive property damage and losses
Feb-May 1998	Forest and Peat Fires Throughout the Country	3,000 hectares of forest burnt
March-September 1998	Water Supply Crisis in Klang Valley	1.8 Million Residents Affected
4 February 1999	Kg. Gelam Landslides	17 dead
October 1998 - June 1999	Japanese Encephalitis (JE) Outbreak In Perak, Negeri Sembilan and Melaka.	101 dead 190,965 Pigs Culled
28 January 2002	Ruan Changkul Simunjan, Sarawak Landslide	16 dead
26 December 2004	Tsunami (States of Penang, Kedah & Perlis)	68 Dead 276 Injured

Note: **Royal Public Inquiry-Under the provision of the Commissions of the Enquiry Ordinance 1950, Act 119 (revised 1973)
*** Public Inquiry –Ordered on a statutory basis under various legislations.**

time scale as required by today's societies, e.g. increase in evacuation clearance time due to the increased population densities

- The pace of engineering advancement and its implementation in practice, e.g. The building codes are not keeping pace with the current engineering practice (Petronas Twin Tower)

• **Politicisation**

Future disasters will be best depicted as a context of framing and blaming (Hart, 1993). Politicians with some skills may turn disaster from a threat into an opportunity / political asset.

In light of the above challenges, how prepared are we in terms of:

Prevention:

Hazard Identification and Risks Assessment

Mitigation:

Research Applications, Technology Transfer, Global Information and Data Access, and Public Awareness to reduce the effects of a disaster on a nation or community

Preparedness:

Resources and Incentives, Leadership and Coordination, and Warning System to enable governments, communities and individuals to respond rapidly to disaster situations and to cope with it effectively
Response and Relief: Measures at Local and International Cooperation directed towards saving lives and protecting property, and to deal with the immediate damage and effects caused by disaster
Rehabilitation: Interventions at local level and greater Inter-Governmental Joint Initiatives after a disaster to restore a stricken community to normal living conditions

Reconstruction:

Multi-disciplinary Approach and Actions to re-establish a community after disaster and reduce the vulnerability that was caused by the disaster in terms of Engineering, Medical, Environmental, Social, Economical, Political and Psychological Perspectives.

The government has undertaken various measures to enhance disaster prevention, mitigation, response, relief and recovery in the country such as: amendments to existing laws and acts; public awareness and education; establishment of forecasting and early warning systems; disaster alert system; mitigation structures; national disaster relief fund; development of standard operating procedures; development programs by Town and Country Planning Department; and bilateral, regional and international cooperation with various nations and agencies (Che Moin, 2006). Disaster scholars and researchers in the country are also taking steps to bridge the gaps between the practitioners, the government agencies, and industries by organising seminars, forums, and trainings on safety and emergency. In line with this, Universiti Putra Malaysia with the collaboration of Fire and Rescue Services Department Malaysia has designed a Masters Degree program in Emergency Response and Planning. Subsequently, the Institution of Masters in Disaster and Emergency Management Malaysia (IMDEMM) is formed to improve networking and collaboration between professionals in the field.

After the Tsunami disaster in December 2004, the Government of Malaysia has intensified awareness and preparedness programs for a Tsunami disaster. The Meteorological Department had installed three technologically advanced deep sea buoys as Malaysian tsunami early warning systems. Tsunami public sirens were later installed at high risk areas in Sabah and Langkawi. A project on seismic and tsunami hazards and risk study in Malaysia is being conducted by various agencies and being co-ordinated by Academy of Science Malaysia. A team of researchers from Universiti Putra Malaysia led by Fakhru'l-Razi Ahmadun is currently undertaking a study on community preparedness and emergency evacuation plan for tsunami disaster in Langkawi.

The challenge for the country is to be able to reduce the likelihood of disaster as nation progress economically. With the increased standards of living in the country, there is also less tolerance by the society to the accidents that involve multiple death and injuries, major damage to properties

and environment. Co-ordinated efforts and collaboration between local community, response agencies, industries and scholars need to be enhanced in order to improve disaster management in the county. ■

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