NTS Alert (Nov/01)

Disaster Preparedness in Southeast Asia

In the final quarter of 2009, Southeast Asia witnessed a number of disasters that affected several countries in the region, attesting to the levels of national preparedness in dealing with disasters. This Alert looks at how governments in this disaster-prone region respond to the impact of these large-scale events.

Contents:

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What are Natural Disasters?


Source: Reuters

The Centre for Research on the Epidemiology of Disasters (CRED) defines a disaster as 'a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering.' For a disaster to be entered into its Emergency Events Database or EM-DAT, at least one of the following criteria must be fulfilled: 10 or more people reported killed; 100 or more people reported affected; declaration of a state of emergency; and calls for international assistance.

The EM-DAT distinguishes two generic categories for disasters: Natural and technological. The natural disaster category was further divided into five sub-groups, which in turn cover 12 disaster types and more than 30 sub-types, as can be found on Table 1.

Table 1 Classification of natural disasters

Disaster Sub-group	Definition	Disasters: Main Types
Geophysical	Events originating from solid earth.	• Earthquakes • Volcanic eruptions • Mass movements (dry): Rockfall, landslide, avalanche, subsidence
Meteorological	Events caused by short-lived/small to meso scale atmospheric processes (in the spectrum from minutes to days).	• Storms: Tropical cyclone, extra-tropical cyclone, local storm
Hydrological	Events caused by deviations in the normal water cycle and/or overflow of bodies of water caused by wind set-up.	• Floods: General flood, flash flood, storm surge/coastal flood • Mass movements (wet): Rockfall, landslide, avalanche, subsidence
Climatological	Events caused by long-lived/meso to macro scale processes (in the spectrum from intra-seasonal to multi-decadal climate variability).	• Extreme temperatures: Heat wave, cold wave, extreme weather conditions • Droughts • Wildfires: Forest fire, land fire
Biological	Disaster caused by the exposure of living organisms to germs and toxic substances.	• Epidemics: Viral infectious disease, bacterial infectious disease, parasitic infectious disease, fungal infectious disease, prion infectious disease • Insect infestation • Animal stampede

Source: Adapted from *Annual Disaster Statistical Review 2008: The Numbers and Trends*, CRED, June 2009.

As in previous years, in 2008 Asia remained the most affected continent by natural disasters. The region accounted for 40 per cent of all reported natural disasters and more than 80 per cent of all reported victims. Economic damage costs in Asia almost doubled from 34 per cent in the period 2000-2007 to 62 per cent in 2008. Looking at the patterns of natural disaster in Asia, one can observed all types of natural disasters. This is particularly true in Southeast Asia. The most common forms of natural disasters in Cambodia, Indonesia, Philippines and Vietnam for the period 1900 to 2009 are:

Indonesia : Earthquakes, volcanic eruptions, floods, droughts, storms, epidemics and wildfires.
Philippines : Earthquakes, volcanic eruptions, floods, droughts and storms.
Vietnam : Floods, droughts, storms and epidemics.
Cambodia : Floods, droughts, storms and epidemics.

What is EM-DAT?

Since 1988 the World Health Organization (WHO) Collaborating Centre for Research on the Epidemiology of Disasters (CRED) has been maintaining an Emergency Events Database or EM-DAT. EM-DAT was created with the initial support of the WHO and the Belgian government. The main objective of the database is to serve the purposes of humanitarian action at national and international levels. It is an initiative aimed to rationalise decision-making for disaster preparedness, as well as providing an objective base for vulnerability assessment and priority setting.

EM-DAT contains essential core data on the occurrences and effects of over 16,000 mass disasters in the world from 1900 to present. The database is compiled from various sources, including UN agencies, non-governmental organisations, insurance companies, research institutes and press agencies. Find out more at http://www.emdat.be/

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The Range of Disasters from September to November 2009

During the final quarter of 2009, Southeast Asia was afflicted by a number of natural disasters that have caused infrastructural damage and human insecurities in several places in the region. Between September and early November alone, a number of earthquakes affected different areas along the Indonesian archipelago (see Table 3), of which the earthquakes that struck West Java and West Sumatra are considered the two major ones. Between 26 September and 31 October, the Philippines witnessed three devastating tropical storms. While the country is used to an average of 20 typhoons a year, the recent storms had tested its disaster response plans to the limit, forcing it to seek international help. The first of the three tropical storms, Typhoon Ketsana, locally known as 'Ondoy', swept across Metro Manila and parts of Central Luzon on 26 September, drenching the island nation with its heaviest rainfall in 40 years - a month's worth in just 12 hours - which flooded about 80 per cent of Manila. After creating a calamity in the Philippines, Ketsana lashed the central and northern provinces of Cambodia and central and highland provinces of Vietnam on 29 October. Typhoon Parma, also known as 'Pepeng', struck the Philippines a week later on 3 October. This was followed by Typhoon Mirinae, also known as 'Santi', on 30 October. On 8 November, this typhoon made landfall in Vietnam. An overview of the extent of damage caused by these disasters can be seen in Table 2.

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Looking beyond numbers and figures

The Padang earthquake accounts for damage to 85 per cent of public infrastructure in West Sumatra. Among the victims were those found trapped in the rubble; shoddy infrastructure often causes increased death tolls in disasters. The government of West Sumatra admitted that they had not been strict in applying building codes and regulations to ensure quake-proof construction. They hence promised to increase supervision in meeting these standards, by setting up a construction council tasked with ensuring that construction plans meet government standards.

Table 2 List of major natural disasters and its impacts in Southeast Asia from September to November 2009

Date	Disaster event	Locations affected	Deaths	Injured	Houses damaged	Other damages
2 Sep	Earthquake 7.3 on Richter Scale	Tasikmalaya, West Java	81	1,287	243,000	• 12,000 damaged infrastructures and public facilities • Over 194,000 people displaced
26 Sep	Typhoon Ketsana (Ondoy)	Metro Manila & Central Luzon, the Philippines (total of 16 cities)	464	529	185,004	• 4,901,234 persons affected
29 Sep	Typhoon Ketsana	Central and northern provinces of Cambodia	43	67	1,783 (as of 7 Oct)	• 40,000 hectares of paddy fields damaged

29 Sep	Typhoon Ketsana	Vietnam (total of 15 central & highland provinces)	163 (two highest: 47 in Kon Tum; 33 in Quang Ngai – as of 4 Oct 09)	616 (as of 4 Oct 09)	400,000	• 3,000,000 people affected • destroyed crops across central Vietnam
30 Sep	Earthquake 7.6 Richter Scale	Padang, West Sumatra	1,117 (two highest: 675 in Pariaman; 313 in city of Padang)		279,000	• 8,800 damaged infrastructures and public facilities
3 Oct	Typhoon Parma (Pepeng)	The Philippines (total of 36 cities)	456	207	54,373	• 4,478,284 people affected
30 Oct	Typhoon Mirinae (Santi)	The Philippines (total of 8 cities)	18	6	75	• 13,456 people affected
8 Nov	Typhoon Mirinae	Vietnam (total of 9 provinces)	123 (Highest: 78 in Phu Yen - as of 8 Nov 09)	145	50,755	• 19,000 hectares of paddy field damaged • 2,400 hectares of fish and shrimp aquaculture damaged

Sources: Various media and government reports.

The quake and the subsequent landslides had cut access to several remote areas, particularly the inland mountainous areas. It has hindered aid distribution during periods of relief efforts and could further slow down the reconstruction and rehabilitation process. Essential aid has only reached most isolated villages nearly four weeks after an earthquake. The Indonesian National Agency for Disaster Management (Badan Nasional Penanggulangan Bencana or BNPB) has stated that rebuilding of roads and bridges are one of the main priorities of the reconstruction and rehabilitation process. These efforts will be supported by the Indonesian Military (TNI), which have agreed to deploy 500 soldiers to rebuild roads or create new access routes to affected areas.

In the disaster's aftermath, the threat of fresh landslides in affected areas becomes imminent with the coming of the monsoon season. Therefore, there is a need to relocate the people from emergency shelters to transitional shelters that are stronger. There is a shortage of water for thousands of survivors, with contaminated wells and damage to water pumps in many houses. More than a month following the earthquake, the survivors are still grappling with lack of clean water and sanitation. Approximately 600,000 people in Padang are projected to be dependent on water trucks until the end of 2009.

Table 3 List of earthquakes in Indonesia, September-November 2009

Date	Area affected	Magnitude (on Richter Scale)
2 Sep	Tasikmalaya, West Java	7.3
30 Sep	Padang, West Sumatra	7.6
4 Oct	Papua	5.5
24 Oct	Maluku	7.3
25 Oct	Maluku	5.3 and 5.0
29 Oct	Jayapura, Papua	5.8
29 Oct	Bitung, North Sulawesi	5.6
9 Nov	Bima, West Nusa Tenggara	6.7
10 Nov	Maluku	5.2
10 Nov	Mentawai, West Sumatra	4.8
11 Nov	Mentawai, West Sumatra	5
12 Nov	Tanahmasa, North Sumatra	5

In the Philippines, survivors living in the presence of flood waters and in shelters are at risk of infectious disease outbreaks caused by the lack of safe water and clean sanitation. Among the victims of Mirinae, there were 167 people who suffer from leptospirosis, a flood-borne disease caused by exposure to water contaminated with rat and other animal urine.

In the case of Cambodia, even before the advent of Ketsana, the country had experienced heavy rains since 8 September, and the resultant flood waters had inundated 39 communes in six districts of Kampong Thom Province. In addition to the existing flooding, the tropical storm brought more flood water and havoc to at least three provinces. It has brought long-term impacts due to destroyed rice, vegetables and other cash crops. According to Agriculture Minister Chan Sarun, out of 2,331 million hectares of land under paddy cultivation, the tropical storm had damaged between two to four per cent, or 40,000 hectares. As a result, both farmers who own farmlands and those who sell their labour to work on farms are deprived of their livelihoods. International aid organisations like Oxfam are warning of a looming food crisis with 15,000 households waiting for immediate food assistance, with the number increasing rapidly as

Source: AFP

floodwaters continue to recede slowly. Many more families have used up their food stocks. Many in hard-hit regions have resorted to dangerous practices to feed their families. Some farmers, for example, have been selling their cattle at rock-bottom prices. Others who have no assets are borrowing money, promising to pay it back with cheap labour at 2,000 riels ($US 0.48) a day. This makes them increasingly vulnerable to labour exploitation.

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An Important Milestone, Yet Not Enough

In response to the frequent disasters, governments in the region have established or appointed a dedicated national body as the focal point for natural disaster management. Under the Law No. 24/2007 on Disaster Management, the Indonesian government formed the BNPB in 2008. It is tasked with disaster prevention, relief effort coordination and overseeing post-disaster reconstruction. Following the Indian Ocean tsunami in 2004, the Indonesian government is increasingly capable of leading the disaster response operations, with the BNPB as its spearhead. The government plays a coordinating role in both domestic and international responses.

In the aftermath of the Tasikmalaya earthquake in West Java, the government promised to cover 80 per cent of the total rehabilitation funds, equalling to 1.5 trillion rupiah. The remaining 20 per cent will be covered by the relevant provincial and municipal governments. Considering the relatively modest magnitude of the disaster and its increasing disaster management capacity, the Indonesian government did not appeal for international assistance. Yet, international assistance remains welcome. Rebuilding of houses and educational facilities are the main priorities of the reconstruction process that began in mid-October and is scheduled to be completed by the end of February 2010.

In a different case, the severity of the West Sumatra earthquake has compelled Indonesia to appeal for international assistance. The government estimates that the reconstruction process in West Sumatra will cost up to $US 700 million, including a proposed $US 300 million to rebuild damaged houses and the remaining used to reconstruct damaged public facilities and other infrastructure. The government is planning to adopt the combination of the reconstruction model used for the tsunami-affected Aceh and the 2006 Yogyakarta earthquake by taking into consideration cultural values in West Sumatra. President Yudhoyono noted that the reconstruction and rehabilitation process have to be seen as an opportunity to build more resilient communities and infrastructure for future disasters.

The National Disaster Coordinating Council (NDCC), chaired by the Secretary of National Defense, is the focal point for disaster management in the Philippines. The NDCC comprises 18 heads departments or agencies as members. These include the Chief of Staff of the Armed Forces of the Philippines, Secretary-General of the Philippine National Red Cross, th the head of the Philippine Information Agency, Executive Secretary and the Administrator of the Office of Civil Defense. Disaster preparedness, prevention, mitigation and response are carried out under the NDCC system. At the national level, the NDCC serves as the President's advisor on disaster preparedness programmes, disaster operations and rehabilitation efforts undertaken by the government and the private sector.

The Philippine government has come in for scathing criticism for its response, with many calling it inadequate and delayed. The government has so far not responded directly to the accusations that it has not been doing enough, although it acknowledged that it had been overwhelmed by the disaster. Survivors, while thankful for the relief goods that have been coming their way, have criticised the government for not warning residents early enough about the floods or for not having enough resources to deal with the calamity. The storms also exposed the government's poor urban planning that has allowed sprawling shanty towns to be established beside flood pathways and riverbanks.

Source: PHYSORG.COM

Responding to earlier criticism during the aftermath of Ketsana, government agencies responded swiftly to the remaining storms, launching extensive search and rescue operations and releasing emergency relief stocks. The military also provide help in relief efforts. Pre-emptive evacuation of people living in vulnerable areas has been undertaken. However, the extensive damage caused by flood waters has meant that the capacities of many local and national response agencies have been exhausted. On 28 September, the Chair of the NDCC requested through the United Nations Resident Coordinator for the assistance of the international community in responding to the effects of storms.

In Cambodia, the National Committee for Disaster Management, a ministerial-level agency chaired by the prime minister, is at the forefront in responding to disasters. The government, in partnership with international agencies, assesses the damage to and needs of affected communities in the aftermath of Ketsana. Food, relief supplies, and medicines have been provided. The Cambodian Ministry of Health (MOH) has provided flood kits, diarrhoea kits and anti-malaria medicines to affected areas. Mobile health teams have been sent to affected areas. Water purification tablets have also been supplied by the MOH. Further damage assessment is underway.

In Vietnam, the People's Aid Coordinating Committee serves as the focal point for coordination of relief support. During the recent typhoons, the Vietnamese government was prepared to distribute food and non-food aid to affected communities and to work together with international agencies. The government was also able to monitor the coming typhoons. The early-warning mechanism was functioning and evacuations were successful in

minimising casualties. More than 200,000 people had been evacuated from the path of Ketsana before it struck central Vietnam. The military and the police also helped the authorities to conduct evacuations down to the local level. Although more than 370,000 people were evacuated from the typhoon's path, it remains a challenge for the government to provide shelter and food for the evacuees. Floods and mudslides have also made it difficult to deliver aid to the survivors in several areas.

Moreover, unexpected sustained heavy rains and having to recover from the impact of Ketsana compounded the impact of Mirinae in Vietnam, overwhelming the resilience of communities and the government's capacity to respond. Despite progress shown in the country, the Vietnamese government is expected to further improve its preparedness to cope with storms and flooding, especially with the increasing magnitude and frequency of these storms. Bui Minh Tang, the Director of the National Centre for Hydro-Meteorological Forecasting, argued that Vietnam needs to improve its capacity, infrastructure, equipment and technology in meteorological forecasting. It would be useful to support public early-warning systems that have been put in place.

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Minimising casualties and humanitarian risk

In responding to the earthquake in West Java, BNBP spokesperson, Priyadi Kardono, admitted that there was lack of resources and coordination. Even though there were adequate amounts of aid, it was unevenly distributed and did not reach the survivors in a timely manner. Limited human resources and other means such as transportation caused the delay. Learning from this experience, the provincial government of West Java is planning to establish a Local Agency for Disaster Management, to be operational by early 2010 to effectively address and coordinate future disaster management activities.

This case reflects general concern regarding weak coordination of recovery efforts and slow assistance to the victims. In disaster relief, time is essential to minimise casualties. Logistical delay should be cut to deliver help in time. Yet, Dr Syamsul Ma'arif, the Chairman of BNBP argued that the success of relief and recovery efforts should be proportionally assessed in a wider perspective. Delayed in immediate response on the ground could be caused by the collapse of local authorities which also will find themselves as disaster victims.

This is where a peopled-centred disaster management approach should be further advanced. According to Indonesian law, local communities should be at the front lines of disaster prevention and responses. Looking at the developments surrounding Typhoon Ketsana's landfall in the Philippines, civil society has become the forefront of relief efforts when the government is overwhelmed. Strengthening community capacity to prevent and cope with disasters is a concrete way to save lives. Developing early-warning systems is crucial. The Vietnamese government and Vietnam's communities have set a good example in implementing early-warning mechanisms in the wake of the two recent typhoons. Disaster preparedness awareness and skills for emergency situations should be fostered among communities living in disaster-prone areas. As further argued by Dr Ma'arif, 'there is a need for trust-building measures between the government and the people, so it becomes a strong social asset'.

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Conclusion

Observing recent experiences in dealing with disasters, some countries are better prepared than others. Nevertheless, improvements in disaster management capacity are pertinent for all states in the region. Scientific findings have indicated that the region would see an increasing magnitude and frequency of natural disasters. Disaster management should be seen as a cycle of prevention and emergency relief, to rehabilitation and reconstruction. Rehabilitation and reconstruction processes should aim to strengthen the resilience of the communities as a means of prevention, so that when the next disaster hits, both states and communities in the region would be better prepared.

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