



# NTS ALERT

## Grappling with Natural Disasters

*Late January and early February witnessed extreme weather conditions, particularly seen in China's devastating winter conditions and Indonesia's national-wide floods. This edition of NTS Alert examines state responses to these weather disasters.*

### China's Winter (not so) Wonderland

Officials from the China Meteorological Administration have noted that the extreme winter conditions, experienced since late January 2008, are the nation's worst since 1986-87. Temperatures varied widely, hitting a record high at the beginning of this winter and falling to the extremely low level thereafter. Since December 2007, the temperature averaged minus 2 degrees Celsius, 0.3 degree below normal and a record low for the past two decades. During the second week of January 2008, the temperature averaged minus 7.6 degrees Celsius nationwide, 2.5 degrees below normal.

Damage and loss from the sudden cold snap, icy rain and feisty snow storms for nearly a month had been devastating, resulting in several casualties and deaths, structural collapse, blackouts, transport delays and immense livestock and crop loss in the country's eastern, central and southern regions. The 19 provincial-

level areas plagued by snow and cold weather were Hunan, Hubei, Anhui, Guangxi, Jiangxi, Guizhou, Henan, Yunnan, Sichuan, Chongqing, Qinghai, Shaanxi, Gansu, Xinjiang, Zhejiang, Jiangsu, Fujian, Guangdong and Hainan.

The extreme winter conditions paralysed key transport systems thereby impeding travel plans of thousands of Chinese migrant workers heading back to their home provinces in the lead up to Chinese Lunar New Year Holiday season. Heavy snow hit central, eastern and southern China, areas which are normally used to milder winters. Chinese state media had estimated that half a million passengers could be left stranded at a railway station in Guangzhou, South China after snow cut power to more than 136 trains. Flights in several airports around the country were also delayed. Snow that hit the eastern financial hub of Shanghai for three days in a row brought traffic to a crawl and delayed several flights.

Speaking at a national video conference on disaster relief, Civil Affairs Minister Li Xueju noted that disasters killed 107 people and caused an estimated economic loss of 111.1 billion yuan (about 15.3 billion U.S. dollars). A total of 21 provincial-level areas were affected. About 1.5 million people were evacuated, and 1.93 million stranded passengers have been transported out. In addition to this, the storms have resulted in the collapse of at least 354,000 houses, homes to about 100 million residents.

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The extreme weather also affected nearly 24.4 million hectares of farmland and 18.6 million hectares of forests. The latter makes up about a tenth of China's forests and includes 6.83 million ha of bamboo, 11.62 million ha of woods and 15,333 ha of saplings. In the hardest-hit regions, nearly 90 per cent of forests were destroyed. In an initial report by the State Forestry Administration, the storms had caused about US\$2.5 billion (S\$3.5 billion) of damage to China's forests by the end of January. Statistics released by China's Ministry of Agriculture at the end of January noted that approximately seven million ha of farmland, mainly located in the mid and downstream areas of the Yangtze River, were hit by the snow, much of which lost all their output.

The winter storms have even posed a threat to the country's energy resources. Energy sources may be depleted as China's Liujiaxia Hydropower Station in the northwest province of Gansu fails to function with much of the water in the Liujiaxia Reservoir frozen. The Liujiaxia Hydropower Station, on the upstream of the Yellow River, was completed in 1974 with a reserve of 5.7 billion cubic meters of water. It was the first one million kilowatt hydropower station that China had designed and built on its own. Workers at the power plant have been doing what they can to prevent further damage to the plant's machinery while local authorities have launched round-the-clock monitoring of the frozen reservoir. According to the maritime bureau of Linxia Hui Autonomous Prefecture in Gansu, temperature around the reservoir has dropped to minus 20 degrees centigrade.

### ***Government Action***

The Chinese government has acted swiftly in addressing the disaster and has been commended internationally for their prompt and effective action. In a Statement by the director of the UN International Strategy for Disaster Reduction (ISDR), Salvano Briceno, he praised the Chinese government for its quick response and ability to actively mobilise its resources to alleviate the adverse circumstances for more than 100 million people.

### **La Nina or Climate Change?**

Experts say that the unusually harsh winter in China was caused by a La Nina weather pattern – which is a periodic cooling of waters in the Pacific Ocean – and not linked directly to climate change. Chinese meteorologists explained that weather was due to an unusually strong cold front moving in from north-west China and the La Nina effect. Rain and snow occur when warm and moist air from the south meets cold air and freezing temperatures in the north. 'This was a historic event,' Mr Zheng Guoguang, chief of the China Meteorological Administration sees the winter storms as being "a historic event". He noted that the weather was the coldest in 100 years in central Hubei and Hunan provinces, going by the total number of consecutive days of average temperature less than 1 deg C.

Australian climate scientist Penny Whetton, an author of the United Nations' Intergovernmental Panel on Climate Change (IPCC) fourth assessment report, said the Chinese explanation for the storms was valid, adding that the bad weather was not linked to climate change. She added that climate change models do not predict increases in snow as has been seen in China. Nonetheless, global warming would result in a less stable climate such as drier, wetter and hotter conditions, as well as more intense tropical storms. Dr David Jones, head of climate analysis at Australia's National Climate Centre, concurred with this, explaining that unlike snowstorms, disasters such as floods, heatwaves and fires could be determined as a result of rising temperatures and rainfall worldwide.

#### **Source**

Snowstorms 'not due to climate change', Straits Times, 5 Feb 2008

### ***The Role of the Military***

The military played a significant role in disaster relief operations and reconstruction by mobilizing as many as 6.43 million soldiers and officers and 18.69 million militia/reservists. Their roles included clearing roads of heavy snowfall, repairing damaged infrastructure, providing relief supplies to affected areas and managing crowd

control at railway stations. In the southwest province and Guangxi Zhuang Autonomous Region, for instance, joint efforts between the Ministry of Civil Affairs and the armed forces facilitated the use of helicopters to air-drop 43 tons of relief supplies. The military and armed police forces had also donated 123million yuan and 15 million items, including winter clothes.

China has also acted swiftly upon receiving international assistance. The United States military rendered their assistance by shipping thousands of jackets, blankets and boxed rations worth US\$820,000 to help victims of the storms. According to Wang Zhenyao, director of the Ministry of Civil Affairs' disaster relief bureau, the supplies were handed over in Shanghai to the People's Liberation Army, which forwarded them for distribution to parts of the country's hard-hit eastern and central regions. Aid from Japan, worth 57 million yen (about 524,000 U.S. dollars) which included 300 power generators, 300 coils of wire, 3,000 blankets and 2,100 sleeping cushions, were immediately transferred to eastern Anhui Province.

#### ***Assistance to China's rural and agricultural areas***

Recognising the immense damage on the country's agricultural sector, the Chinese government has taken a range of measures to alleviate the adverse situation. The State Forestry Administration, for instance, has allocated a total of 34.3million yuan (USD 4.7 million) for subsidies to the worst-hit six provinces. It has also made plans to cut back relative taxes to relieve farmers and encourage production after the snow storms. In addition to this, China's Ministry of Science and Technology has proposed to provide technological support to assist restoring industrial and agricultural production. According to Mr. Wan Gang, Minister of Science and Technology, the ministry would closely monitor secondary disasters as a result of the snow storm and send technicians to snow-hit areas to facilitate power grid reconstruction and agricultural production. China's early warning system against natural disasters would also be strengthened by granting more funds into research in related areas. These

efforts are in addition to the 20 million yuan (2.73 million U.S. dollars) that has been allocated by the Ministry of Science and Technology for disaster relief. The Ministry has also distributed science brochures to snow stricken areas.

In addition, the ministries of civil affairs and finance have allocated a total of 535 million yuan (USD 73.79 million) in emergency funding to regions affected by the disaster. The two ministries have so far earmarked another 710 million yuan for needy urban and rural residents in seven of the worst-hit provinces and regions as temporary subsidies.

#### ***Efforts in repairing transport and telecommunication systems***

In resuming transport systems, the Ministry of Railways dispatched about 100 diesel locomotives to move the electric trains and ordered 63 trains to bypass the non-operational section of the Beijing-Guangzhou line. This is important as the trains do not only transport passengers, but also with coal that is critically needed for energy in power plants.

The government also extended the highway toll exemptions for trucks carrying food to help snow disaster relief work and reconstruction in affected areas till the end of March 2008. The "green channel" service, which is conventionally used to meet the rising food demands during the Lunar New Year season, allows vehicles carrying agricultural products toll-free of seven major highways. The highways, which extend to a total of 27,000 kilometers, connect 29 provincial capitals and 71 major and medium-size cities. The move was aimed at maintaining stable food supplies and ensuring price stability for larger cities. Vehicles carrying steel structures, conduits, cable, cement poles, hardware, and construction equipment to restore electricity facilities would also be exempted from tolls.

#### ***Regenerating power and electricity***

As the intensity of the winter storms mellowed by mid February, Premier Wen Jiabao presided over the executive meeting of the State Council (China's Cabinet) on the issue of rebuilding





disaster affected areas and pledged to normalize life and production in snow-hit provinces as soon as possible. The meeting marked a turning point of China shifting the focus of its efforts from disaster relief to reconstruction of the badly hit areas. The Chinese government pledged to ensure that power supply in the affected areas be completely normalized by the end of March 2008, rebuilding of collapsed houses be completed by the end of June and transport facilities, telecom networks and radio and TV broadcasting networks be normalized as quickly as possible.

While power supplies, coal reserves and traffic in many parts of the country have resumed and prices remain relatively stable in disaster-hit areas, officials, such as Civil Affairs Minister Li, noted that the current disaster-relief work was “still at a crucial stage”. As the temperature rises, disasters induced by thawing snow and ice, such as geological disasters and environmental pollution, may occur and further exacerbate losses. Mr Li added that electricity supply, traffic and telecom services to villages in some remote and mountainous areas, including Hubei, Jiangxi and Guizhou, have not been restored. Some villagers still face the lack of access to water and other basic necessities. Despite the availability of grain storage/reserves, many households were without rice due to a lack of electricity to run their grinding machines. This was partly due to the fact that there were difficulties in transporting coal used for power generation to the various affected areas.

The State Council also made detailed plans for restoring industrial and agricultural production in the affected areas, including the providing of crop seeds and food to affected farmers and in increasing coal, power and oil shipments to affected areas.

#### ***Policymakers and academics doing their part***

Chinese leaders have also been proactive in on-ground relief operations by making visits to affected areas. President Hu Jintao also did his bit by helping soldiers load food and other relief supplies onto a helicopter in the autonomous region of Guangxi in south China. Premier Wen

Jiabao travelled to the provinces of Jiangxi and Guizhou on his third tour of disaster areas in nine days. He visited one city that has been without electricity for three weeks. Expressing concern over market supplies and commodity prices, Wen visited a privately owned supermarket in Guiyang city in Guizhou, to enquire about the prices of produce, grain and pork at several booths.

Chinese academics have also pitched in to provide the government with their analysis of the winter crises. According to China's *Guangming Daily*, scientists from the Chinese Academy of Engineering held two workshops and made several recommendations, such as increasing the level of transparency on information regarding natural disasters and further enhance state capacity in responding to natural disasters. Emergency disaster plans should be further refined and simulation exercises be conducted to better prepare people in the event of a natural disaster. Participants at the workshops also suggested that the government re-adjust standards and policies regarding the construction of infrastructure and houses so as to improve their structural resistance against natural disasters.

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## Indonesia's Annual Disaster

The monsoon season, between the months of December and February, more often than not results in annual floods throughout Indonesia. The floods have had devastating consequences year on year in various areas, primarily in terms of economic, infrastructure and health.

In the capital city Jakarta, flooding brought the capital to a standstill and trapped thousands in traffic jams for more than 12 hours. The heavy rainfall also resulted in poor visibility thereby delaying several domestic and international flights departing and arriving in Jakarta. This even led to a backlog and long flight delays in other cities such as Singapore. As many as 58 flights were detoured, 177 flights delayed thereby leaving approximately 1,000 passengers stranded. In addition to this, flooding in areas surrounding to Jakarta's Sukarno-Hatta airport rendered vehicles immobile as water levels on the toll road

were as high as 28 inches of water. Cranes were then brought in to remove the vehicles. In an telephone interview to *Reuters*, an official from the toll road management company PT Jasa Marga noted that rubber boats were used to transfer passengers to buses and take them to airports. Casualty-wise, health official, Rustam Pakaya, noted that three people died in west Jakarta and nearly 100,000 people were displaced. Fortunately, few had reported of diarrhoea or other borne-diseases.

Torrential rain across Central and East Java provinces at the start of the year triggered landslides and floods that killed more than 100 people and displaced tens of thousands. In East Java, water as high as three feet had submerged the Situbondo district resulting in two deaths and one case of hospitalization and 27 others injured. Floods in Nusa Tenggara resulted in the deaths of four people. Speaking to reporters, Sentianus Medi from the local disaster management centre noted that the victims lived in districts located on riverbanks. More than 500 people had left their homes and 1,000 hectares (2,500 acres) of rice fields were under water.

Disaster also struck on the Indonesian Island of Sumatra. In West Sumatra, flash floods destroyed at least 276 houses with the water levels reaching up to 2.5 meters in worst-hit residential areas. Speaking to Antara News Agency, Ade Edward, chief of the West Sumatra disaster mitigation task force noted that majority of the houses destroyed were located in Padang municipality. The floods also destroyed irrigation networks and inundated roads in Padang and thousands of hectares of paddy fields in Pesisir Selatan, Padang, Padang Pariaman and Agam. In a related development, abnormal high tides also affected at least 20 houses at coastal region of Padang on Tuesday night.

### ***Government (in)action?***

Many Indonesians are, however, increasingly frustrated with the government's efforts in managing the annual floods. Moreover, this comes six months after Jakarta Governor, Fauzi

### **Cold Snap Strikes Again**

Just as weather conditions seemed to be clearing up and provinces were on the road to recovery, China was again hit by a cold snap. Snow and freezing weather in China's southwestern province of Yunnan stranded 20,000 vehicles on highways, cut power supplies and crippled transport systems almost two weeks since the winter disaster struck.

Fortunately, swift responses were taken by authorities in Yunnan. Military personnel were mobilized to deliver emergency supplies and evacuate victims to government shelters or homes of people living near the highways. Yet the lack of available funds and sophisticated technology hampered relief efforts as relief workers resorted to spraying salt as a means of clearing the roads. The road to recovery remains long as China would have to persevere in its efforts and hope for fair weather.

#### **Sources**

Southern China Hit by Snow, 20,000 Vehicles Stranded, *Bloomberg*, 18 Feb 2008





Bowo, promised during elections to end the city's annual floods. Speaking to The Straits Times, provincial government spokesman Arie Soedarto stated that President Susilo Bambang Yudhoyono has urged Governor Bowo to work with the central government to end the floods and share the costs. During his assessment of inundated areas, Governor Bowo noted that funding was a problem, as flood-relief projects would cost the province around 1.2 trillion rupiah (US \$131 million). Several projects are still in the pipeline such as the construction of the East Flood Canal to channel flood water to the Java Sea, and the building of relief reservoirs.

But there may be limits to what can be done. The East Flood Canal Project, for example, has raised issues of land ownership between the government and local residents. While government officials maintain their stance of having a strong legal base for ownership of land allocated for the canal's construction, local residents claim that they are not aware of such arrangements nor have they received any payment for it. According to Indonesia's *Warta Kota daily*, a recent case involved hundreds of North Jakarta residents, who tried to stop dozens of workers Wednesday

at the construction site in Marunda subdistrict and Cilincing district. Claiming a total of 11 hectares of land at the two sites, the residents removed the poles that were marking the project area and demanded authentication of the land ownership.

According to Governor Bowo, reports from North Jakarta's administration indicated the authenticity of the city's land certificates made during 2004 to 2006. The administration has so far used about Rp 499.9 billion (US\$54 million) out of Rp 850 billion (US\$ 93 million) it allocated in the 2007 budget for land acquisition. Between late 2006 and the end of 2007, more than 80 percent of the 18.3 hectares of land needed for the project (expected to be completed in 2009) was acquired by the administration. The extent to which this sum has gone to the original land owners remains to be determined, as seen in the protests by local residents.

There is also the issue of Jakarta's low-lying terrain. Environmentalists say that Jakarta is prone to flooding partly because 40 per cent of the city of 12 million people is below sea level. Speaking to reporters, Governor Bowo explained that Jakarta was now 40cm lower than it was 18

**State Responses to Disasters: A Comparison\***

<u>China</u>	<u>Indonesia</u>
<ul style="list-style-type: none"> <li>• Unprecedented Natural Disaster due to the La Nina Effect</li> <li>• Occurring days before the Chinese New Year Holiday Season</li> </ul>	<ul style="list-style-type: none"> <li>• Annual flooding experienced during Monsoon Season</li> <li>• Man-made because largely due to ad hoc town planning, poor drainage system</li> <li>• Consequential landslides also man-made – due to deforestation</li> </ul>
<ul style="list-style-type: none"> <li>• Quick response in mobilising various ministries and military to address problem</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of urgency and coordination amongst Ministries to deal with problem.</li> </ul>
<ul style="list-style-type: none"> <li>• Government gained the support of affected populations for addressing problem</li> <li>• Government commended internationally for swift response.</li> </ul>	<ul style="list-style-type: none"> <li>• Government faced with disenchantment from affected populations for failure to address the annual problem despite promises.</li> <li>• Further disputes with local populations regarding land acquisition for flood management projects.</li> </ul>

*\*based on articles cited in this news bulletin*

years ago because of subsidence caused by intensive tapping of ground water by residents. According to Mr Hasbi Abdul Azis of environmental group Walhi Indonesia, even if there was no rain in north Jakarta, flooding could take place during high tide. He added that rapid development of shopping malls and housing estates in catchment areas were also contributing factors to the severe flooding, as mangrove swamps acted as natural barriers to water flowing inland.

Despite all the reasons given, it does very little to appease Indonesians who are increasingly disillusioned with their government's performance. Speaking to Reuters reporters, Vera Yolanda Sari, a resident in Jakarta, blamed the floods on poor city planning and the clogging up of rivers by residents dumping trash. Moreover, progress for action is slow as the Indonesian government had already earmarked a billion dollars towards preventing a recurrence of floods. Indonesians in affected areas therefore would have to continue to struggle to cope with recovering from the annual disaster and their existing poor infrastructure.

Fortunately, non-governmental organisations (NGOs) have been able to do their part to alleviate the adverse circumstances by being readily prepared to assist in flood relief. According to a press release by the London-based NGO, Muslim Aid, they in collaboration with Qatar Charity have mobilized their team of volunteers to assist Indonesian flood victims in the Rawa Buaya sub-district of West Jakarta. Such swift coordination between the NGOs was possible as Muslim Aid's network of 900 volunteers have been prepared in advance for this year's floods through several coordination

meetings and training programmes, which have allowed them to learn from their relief work experiences during floods in the previous year.

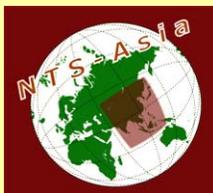
After the floods which inundated a number of locations in the Indonesian capital city of Jakarta, residents' concerns over the possibilities of water-borne diseases, such as Chikungunya, dengue fever and diarrhea, have increased significantly. Having learned from their previous experiences, Rawa Buaya residents had the initiative to keep their environment free of these diseases by holding an environment clean up day. Two non-governmental organisations, *Muslim Aid* and *Qatar Charity*, provided the residents with the necessary means to do so by distributing about 57 packages of cleaning kits to the residents of Rawa Buaya, which included 1 shovel, 1 wheelbarrow, 1 hoe, 1 fork, 5 pairs of rubber boots and 10 sacks for removing the mud. 500 mattresses and 500 blankets were also distributed.

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