

Briefing Note – 08/08/2014

China/Yunnan Earthquake

Epicentre: Longtoushan, Yunnan Province, Magnitude: 6.1



Need for international assistance	Not required	Low X	Moderate	Significant	Urgent
Expected impact	Insignificant	Minor	Moderate X	Significant	Major

Crisis Overview

- On August 3, at 16.30 local time, an earthquake, with a magnitude of 6.1 at a depth of 12 km, hit Longtoushan township in Ludian county, Yunnan province, which is located in South West China.
- As of August 7 17.00 local time, 615 people had been killed, 3,143 had been injured and 114 people were still missing. 230,000 had been relocated.

Affected groups	Yunnan
Resident population	46,600,000
Killed	615
Injured	3,143
Missing	114
Total affected	1,000,000+
Total displaced	230,000

Sources: Earthquake Report, 07/08/2014, Amity Foundation 07/08/2014, UNICEF 04/08/2014, AFP 07/08/2014

Rescue teams are still combing the rubbles in search of survivors.

- 80,900 houses have been destroyed, 120,100 are seriously damaged and 466,100 slightly damaged. In Yengan village, 90% of houses have been reported damaged.

Key Findings

Anticipated scope and scale	Concerns of continuing landslides and risk of flooding in certain areas due to wet season are mounting. Fears over mass disease outbreaks are high due to lack of access to safe water and proper sanitation methods. The economic losses stemming from this earthquake will be at least 6.4 billion USD. The number of fatalities and injuries are expected to rise as remote villages become accessible.
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Map of the affected area

China Earthquake

Earthquake in China's province: Yunnan
Death toll is 615, 114 are missing and 3,143 people are injured.
More than 230,000 people have been relocated.



Priorities for humanitarian intervention

- Establishing communication and safe access routes to remote areas; determining their needs and scope of damage.
- Supply of water, food and appropriate shelter to survivors and displaced communities.
- Ensure dissemination of, and access to safe water and proper sanitation methods in order to deter the threat of waterborne diseases.
- Mass sanitation and logistics.

Humanitarian constraints

The collapse of roads and bridges and landslides are hampering access to affected and remote areas, as well as the evacuation of those injured. Heavy rains are also affecting relief operations. Bottlenecks on the road towards the epicentre have been slowing down the delivery of aid and access of relief workers.

Crisis Impact

Details on the earthquake

On 3 August, at 1630 local time, an earthquake hit Ludian county in Yunnan Province in South West China. The earthquake had a magnitude of 6.1 and was relatively shallow at 12 km depth. The epicentre was in Longtoushan township, 27.1 degree North latitude and 103.4 degree East latitude, and was 11 km northwest of Wenping and 29 km southwest of Zhaotong City (USGS 03/08/2014). This is the strongest earthquake in the region for 14 years (UNISDR 07/08/2014), and although the economic losses stemming from this earthquake are still being estimated, they will be at least 6.4 billion USD (38.48 billion CNY) (Earthquake Report, 07/08/2014).

Killed, injured, missing and relocated

As of 7 August 17.00 local time, the death toll had increased to 615 people (AFP 07/08/2014). There were 114 people still missing and 3,143 people were injured (Earthquake Report, 07/08/2014). More than 230,000 people have been relocated as a result of the earthquake (Amity Foundation 07/08/2014).

Impact on Access of Affected Population to Essential Services

- **Food:** The displaced community is suffering from shortages of food (Amity Foundation 07/08/2014).
- **WASH:** The displaced community is suffering from shortages of water (Amity Foundation 07/08/2014). There is a current threat of waterborne disease outbreaks due to shortages of safe water and lack of proper sanitation methods (UNICEF 04/08/2014).
- **Health:** The city and local hospitals are overwhelmed with injured people, particularly in the paediatric ward (UNICEF 04/08/2014, IFRC 04/08/2014)
- **Shelter:** 80,900 houses have been destroyed, 120,100 seriously damaged and 466,100 slightly damaged (UNISDR 07/08/2014, Amity Foundation 07/08/2014). The displaced community is suffering from shortages of shelter (Amity Foundation 07/08/2014). In Yengan village, residents have reported 90% of houses damaged (World Vision International 05/08/2014). At the epicentre, most people are camped in school buildings, relatively flat spaces and even fields and riverbanks. Survivors have been exposed to rainstorms followed by blazing sun. More shelters and relief items are needed as well as specialist teams (IFRC 07/08/2014).
- **Protection:** With many children traumatised by the shock of the earthquake and also the fear of aftershocks, there is an urgent need to provide safe places for them to play, be able to get counselling and also seek out social welfare support (UNICEF 04/08/2014).

Impact on Critical Infrastructure

As of 7 August, electricity supplies had been resumed for more than 75% of the 38,000 affected households of the Zhaotong region, and communications had also mostly been restored (UNISDR 07/08/2014).

Vulnerable Groups Affected

Children: Child population in Yunnan province is 12 million and accounts for 26% of the total population, 5 percentage points higher than the national average. Yunnan has 2 million left-behind and 1 million migrant children, mainly due to parental labour migration (UNICEF 04/08/2014). In Qiaojia county, 26 people have been killed, most of them children who were buried under a school that collapsed during the earthquake (Earthquake Report, 07/08/2014).

Humanitarian and Operational Constraints

- The collapse of roads and bridges has challenged the emergency response crews in reaching the affected areas. Barrier lakes formed after the quake, putting more people at risk (World Vision International 08/07/2014).
- Epicentre blocked by mudslides: The biggest difficulty for humanitarian actors on the ground has been the access to the epicentre, since it is blocked by mudslides caused by heavy rains after the earthquake. Until August 6, aid had not been able to reach the disaster zone, and helicopters are the only means to take the injured people to nearby hospitals. After trying alternative routes, some humanitarian workers reported being able to reach the disaster zone after 10 hours (Jinde Charities 06/08/2014). On August 7, the Qiaojia Ludian road was cleared of landslides and is open again. Rescue agencies have rushed to the disaster area. The rescue and relief forces have set up a mobile base station in the direct epicentre area (Earthquake Report, 07/08/2014). Many small villages are accessible only by single narrow roads that were buried or swept away by landslides. Further rescue efforts are likely to be hampered by rain (WSJ 06/08/2014).
- Heavy rains affecting relief operations: The road management teams have been trying to recover access, but have been hindered by heavy rains in the area (IFRC 04/08/2014)

Aggravating Factors

Date/Time – Weather/Altitude

The earthquake took place at 16:30 local time (USGS 03/08/2014). Temperatures differ greatly throughout the night, with very low temperatures when it rains (World Vision International 05/08/2014).

Risk of Related Disasters

- **Aftershocks:** As of 5 August, 411 aftershocks had been recorded, some with magnitude as high as 4.9 (IFRC 04/08/2014, UNICEF 04/08/2014). More aftershocks are expected in the coming days (Xinjua 06/08/2014).
- **Continuous rainfall, falling rocks and landslides** are hindering the rebuilding of infrastructure and making the supply of humanitarian aid difficult and dangerous (Amity Foundation 07/08/2014). Rescue workers have told residents that using tents is unsafe due to falling rocks from distant cliffs (WSJ 06/08/2014)
- **Risk of flooding:** Near the border of Ludian and Qiaojia, in Huize county, a barrier lake has led to the evacuation of 4,200 residents from Niulan River area. The barrier lake has already flooded about 370 homes and residents have fled. The army plans to use about 2 tonnes of dynamite to blow up blockage which formed the lake (Earthquake Report, 07/08/2014, IFRC 04/08/2014).
- **Risk of landslides:** The situation of 800 people living along the riversides of the Kraal River is particularly dangerous, since the normal riverbed was blocked by the earthquake landslides and a lake has been forming, and the possibility of landslides is high. The population downstream the lake has been evacuated by the army and rescue personnel. Due to the torrential rain in the mountains, the lake level could rise strongly. As of 7 August, the lake had risen by 30 metres (Earthquake Report, 07/08/2014).

Type of Housing/Infrastructure

Many houses are built with simple mud-bricks and are vulnerable to earthquakes (Amity Foundation 07/08/2014). One of the most severely affected areas is mountainous, and most of the houses there are built with wood or thin concrete (AMDA International 06/08/2014).

Proximity of Critical Infrastructure

Ludian county is located within close proximity of several reservoirs, including Yueliangwan and Tianhuaban. Additionally, the construction of a 23 million cubic metre capacity reservoir had just been completed. There are also three major hydroelectric projects on the river near Zhaotong. The very large Xiluodu and Jiaba dams are just 4-5 kilometres from the epicentre (RFA 07/08/2014).

It usually takes one hour and 40 minutes from the nearest airport to the epicentre, but it is currently inaccessible by car due to fallen rocks, which are blocking main roads (AMDA International 06/08/2014).

Other Vulnerability Factors

Strong earthquakes are reasonably common in Yunnan, and the area within 500 km of where the recent earthquake struck on 3 August has hosted 27 other earthquakes of magnitude 6 or higher in the past century (USGS 03/08/2014).

Current rainy season: Yunnan province is currently experiencing its rainy season, which normally runs from May through October (China Highlights 13/05/2014).

Recent drought: In 2013, more than 2.5 million people in 15 prefectures in Yunnan were affected by drought. The drought affected more than 1.23 million hectares of farmland and 280,000 animals (InKunming 21/03/2013) (China Daily, 02/21/2013).

Key Characteristics of Host Population and Area

- **Demographic profile:** The total population of Yunnan in 2012 was 46,590,000, of which 39.3% was urban (NBSC 2012) (compared to 53% at a national level) (UNICEF 04/08/2014). Large areas of Yunnan are described as remote, poor, mountainous and hosting ethnic minorities. 6.4% of the total population lives under the poverty line (WSP 2012).
- **WASH statistics:** In rural areas of Yunnan, access to improved sanitary latrines stands at 53.7%. In the year 2007, only 30% of urban areas in Yunnan were equipped with sewerage systems, in comparison with 70% nationally (WSP 2012).
- **Lighting and cooking sources:** Nearly all the rural population still uses highly polluting biomass energy, including wood, crop residue, animal dung, and coal fuels, which produce substantial pollution in simple stoves (CleanCookStoves.org).
- **Health statistics:** The under-five mortality rate in Yunnan is 74.9 per 1,000 live births (compared to the country average of 24). The maternal mortality rate is 51 per 1,000 live births. Infant mortality rates are 12.24 per 1,000 live births. Life expectancy in Yunnan is 69.54 (NBSC 2012), which is seven years less than the national average (UNICEF 04/08/2014).
- **Food insecurity:** In Yunnan, food security is generally not a major issue. However, poverty is prevalent and the level of expenditure on food is relatively high (Analysis of Food Security and Vulnerability in Rural China).
- **Nutrition** Children in Yunnan are found to be highly affected by stunting (>40%) (FAO).
- **Literacy** 10%-15% (2000). Enrolment rate of 7-year old children in Yunnan, 2000: 93.6% boys and 91% girls (World Bank, UNESCO).

Response Capacity

Local and National Response Capacity

As of 6 August, coordination of the response was coming from the office of the Chinese Prime Minister, who is working together with the ministers involved in the rescue and relief operation. The National Committee for Disaster Reduction and Ministry of Civil Affairs are providing support, deploying relief workers and army personnel. As of 5 August, the army had been activated, and it will be reinforced by other specialised units. The Chinese seismological agency is providing information regarding aftershocks (Earthquake Report 05/08/2014).

Key agencies on the ground include China Foundation of Poverty Alleviation, Red Cross Yunnan, Red Cross of China and Red Cross Hong Kong. Local NGOs have formed rescue teams. The Chinese government is unlikely to appeal for international assistance (UNICEF 04/08/2014).

Early warning has been credited with saving the lives of several residents during this week's earthquake in Yunnan province (UNISDR 07/08/2014).

International Response Capacity

On 3 August 2014, the International Charter: Space and Major Disasters was activated at the request of the National Disaster Reduction Center of China (NDRCC). The mechanism will provide space-based maps of the affected area (UNOOSA 04/08/2014).

Population Coping Mechanisms

Civil volunteers, with no first-aid or rescue capabilities, have been asked to stay away from the disaster zone, since traffic is blocking the supply routes and 'substandard relief goods' are being delivered instead. Traffic is said to be caused by civilian cars bringing in aid or offering help. Many volunteers have walked into the disaster areas, sometimes sleeping outside or using tents meant for survivors. Unofficial vehicles have now been banned from the area (AFP 06/08/2014).

Information Gaps and Needs

Establishing communication with remote villages in the area and determining their needs is critical, given that access to these areas has become almost impossible. There is little to no information regarding health facilities and their state, and their current supply of medical equipment and drugs.

Lessons Learned

- Early warning has been credited with saving the lives of several residents during this week's earthquake in Yunnan province. The system, which was developed by a private research organisation, transmits warnings via radio waves – which travel several times faster than tremours – during an earthquake of 6.0 magnitude or higher. It means residents a few kilometres or more from the epicentre can benefit from a short, but often crucial, warning.
- Stronger preparedness measures had made a significant difference in the hours and days after the disaster, notwithstanding the tragic circumstances many families had endured.
- China has been an enthusiastic supporter of the Hyogo Framework for Action (HFA). The country has invested heavily in technology including GIS, satellite and aerial surveillance to improve disaster preparedness and response. There are also now over 5,400 model communities for DRR engaging people at local level in practical initiatives to reduce exposure to disaster risk; other towns and communities are encouraged to emulate these examples of best practice.

Sources: (UNISDR 07/08/2014)