

Briefing Note – 25 April 2015

Kathmadu/Nepal

Earthquake Magnitude: 7.8



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

Crisis Overview

- On 25 April, **11:41 local time, an earthquake with of 7.8 magnitude and a depth of 2 km, hit Nepal near the capital city of Kathmandu.** The epicentre is located 81km northwest of Kathmandu, and 68km east from Pokhara. Quake tremors were felt from between 30 seconds and two minutes.
- As of 20:20 local time, 25 April, **at least 876 people have died, 242 of them in Kathmandu.** At least 2,000 people have been injured. The number of casualties is expected to increase dramatically as information is collected.
- As of 17:55 local time, 25 April, **at least 18 aftershocks have been felt.** Magnitudes of some aftershocks have ranged from 5–6.6.
- Hospitals are overwhelmed, and as aftershocks continue, victims are being treated in the streets. Reports suggest people are still trapped under the rubble, and some affected areas have still to be reached.

Key Findings

Anticipated scope and scale

- Given the low depth of the earthquake, aftershocks are expected to continue for some time. Aftershocks are expected to cause further damage and debilitate already weak infrastructure.
- According to the USGS, the number of casualties is expected to increase into the thousands.
- Kathmandu (population: 2.5 million) is a densely populated area; many people live in buildings that cannot withstand a significant seismic event. 6.6 million people live within the affected areas.
- Limited access to affected areas is expected to hamper search and rescue efforts. Clearing the debris is expected to take weeks.
- Rain is predicted for the next three days and people will need shelter. Visibility is expected to be impaired, further hampering search and rescue efforts.

Priorities for humanitarian intervention

- Search and rescue. Given the type of terrain in the country, it is crucial to extend the search and rescue measures to rural areas outside Kathmandu quickly;
- Health: surgery equipment and staff, triage;
- Shelter: family kits, plastic sheets, blankets;
- WASH: provision of safe drinking water, hygiene kits;
- Generators;
- Mobile storage units;
- Communications equipment.

Humanitarian constraints

Damage to access infrastructure (roads, bridges), logistics, climate, and communication.

Limitations

As the situation develops, ACAPS will issue an Updated Briefing Note.

Crisis Impact

The earthquake was the result of thrust faulting on or near the main frontal thrust between the subducting India plate and the overriding Eurasia plate to the north. At the location of this earthquake, the India plate is converging with Eurasia at a rate of 45mm/yr towards the north-northeast, driving the uplift of the Himalayan mountain range (USGS 25/04/2015). The USGS initially reported the epicentre to be 11km deep but later revised it to 2km (Al Jazeera 25/04/2015). **6.6 million people live within the affected areas.** Tremors have been felt as far as in New Delhi (Al Jazeera 25/04/2015). Kathmandu has high population density, open spaces are scarce and streets are narrow (World Bank). As it starts getting dark, people will have to stay in open areas, with no protection, until aftershocks cease. Although figures are changing rapidly, the latest numbers indicate **876 people have died in Nepal and 45 in Northern India** (BBC 25/04/2015). At least, 2,000 people have been injured (Impact Forecasting, 25/04/2015). There is no indication as of how many people are missing. In Phokara, the situation is believed to be less serious than in Kathmandu, as people have returned to their homes and no reports of casualties have been issued.

Access to Essential Services

Food: People have reported restricted access to food. Many families maintain large store of grains (restocked each harvest season), but poorer families and landless families have much more limited food stocks.

Health: Initial reports suggest hospitals are overwhelmed and doctors are treating victims in open spaces.

WASH: People have reported limited access to drinking water. Water supply in Kathmandu had been interrupted in early April. Sanitation is a major concern. Most houses in Kathmandu store water in water tanks. These are expected to run out quickly.

Shelter: Houses have cracked or fallen. Older buildings have collapsed. In villages, whole neighbourhood buildings have collapsed.

Electricity: Kathmandu is currently under loadshedding, meaning there is no electricity for 12 hours every day. As night settles, electricity will be vital in hospitals and to provide protection to populations whose houses have been destroyed.

Impact on Critical Infrastructure

There is significant damage on infrastructure and roads. Collapsed buildings and rubble have blocked access to the area and affected population. There is no electricity in Kathmandu, yet mobile services are slowly being established. Cable internet is working and landlines are working intermittently.

Tribhuvan International Airport in Kathmandu has sustained minimal damage and is open for relief flights (BBC 25/04/2015). **Main highways** near or in the affected areas: Mahendra Highway and Araniko Highway (Ministry of Transportation). Reports have confirmed that the Araniko highway has sustained damages (The Hindu 25/04/2015). Major **hydroelectric power plants** near or in the affected areas: Marsyangdi, Kulekhani (USAID).

Avalanches: Initial reports have suggested that the earthquake triggered avalanches in and around Mt. Everest. The shakes and wind from the avalanches have destroyed some camps, and doctors in the area are treating the injured. Most of the climbers had returned to camp from their morning climb (GDACS) (CNN). Unconfirmed reports suggest Base 1 and 2 were swept away by the avalanche. **Media have reported at least 18 dead, 30 injured and an unknown number of missing people.** Avalanches struck between the Khumbu Icefall, a rugged area of collapsed ice and snow, and the base camp where most climbing expeditions are located. As much as 80 people were between base camps when the avalanche hit (international media 25/04/2015).

Vulnerable Groups Affected

Children, the elderly and people with disabilities are particularly vulnerable, as they are more difficult to move to open areas.

Humanitarian and Operational Constraints

- A major challenge is accessibility to remote disaster sites, which at this point is still only by aerial transport. Responding teams might have to prepare to downsize accordingly and go with light equipment.
- Poor physical connectivity is a major challenge. The road density in Nepal is one of the lowest in South Asia. Over 1/3 of the people living in hills are more than four hours away from an all-weather road. In addition, 15 out of 75 district headquarters are yet to be connected by a road. The quality of road networks is poor, as 60% of road networks, including most rural roads, cannot provide all-weather connectivity (World Bank). In 2013 WFP reported that an earthquake in the area would likely render all roads in and out of the Kathmandu Valley impassable, as well as damage the airport (OCHA 21/05/2013).

Aggravating Factors

Weather/Altitude

Kathmandu Valley, situated at an altitude of 4,297ft (1,310m) has a mild climate most of the year. Summer temperature ranges from 67°F to 81°F (19°C - 27°C). In spring (March to April) there are occasional short bursts of rain. May and June can be hot and humid until the monsoon rain brings some relief. **A three-day weather forecast shows an 80% chance of showers and thunderstorms expected in Kathmandu, which might hamper rescue efforts** (CNN).

Population Density and Urbanisation

Population density (people per sq. km) in Nepal: 209

Population in Kathmandu: 1,037,073

Rural population in Nepal: 24,506,759

%Rural population in Nepal: 81.1

Urban Population: 5,452,604

% Urban Population: 18.2%

Type of Housing/Infrastructure

Many people live and work in buildings that will not withstand a significant seismic event. Infrastructures in some of the affected areas are very old and weak.

Other Factors of Vulnerability

Since 2009, Nepal has witnessed the signing of a peace agreement between the former Maoist rebels and the state, a new interim constitution, the election of a Constituent Assembly, the abolition of monarchy and declaration of a federal republic, five governments, and the rise of strong ethnic identity movements.

Key Characteristics of Affected Population and Area

- **Demographic profile:** Population of Nepal (2011 census): 26,494,504. Ethnic groups: Nepalese 58%; Bihari 18%; Tharu 4%; Tamang 4%; Newar 3%; Magar 2%; Abadhi 2%; Other 12% (populstat). Rural population: 83% (2012) (UNFPA). Population below poverty line: 25.2% (2010) (WHO 2012). HDI (2014): 0.540 (145 out of 187) (Human Development 2014).
- **WASH:** Population with access to improved water: 88% (2012) (WHO 2012).
- **Lighting and cooking:** 62.8% of houses in Nepal have electricity. The majority use wood for cooking.

- **Health statistics:** People per physician: 13,777. Maternal mortality rate 190 per 100,000 (2012). Under 5 mortality rate: 42 per 1,000 live births (2012) (UNFPA). Leading diseases and illnesses include diarrhoea, gastrointestinal disorders, intestinal parasites, leprosy, and tuberculosis (Nepal Times 2011).
- **Nutrition:** Around 49.3% of children under five are chronically malnourished (FAO, 2010).
- **Literacy rate average:** 65.9% (populstat).
- **Weather:** Nepal has a typical monsoonal, two-season year. The dry season runs from October to May and the rainy (monsoon) season from June to September (Visit Nepal).
- **Location and Type of Housing/Infrastructure:** In the valleys, burnt or sun-burnt brick walls are used, with thatch or brick roofing. In the Terai, houses are built with bricks or mud. Higher in the mountains, stones are the primary materials used. Poorer populations use bamboo-reinforced mud walls (UN Habitat Nepal). The western area is mainly farmland, and the poorer communities live in mud and straw huts, which wash away easily (The Guardian 18/08/2014).

Response Capacity

Local and National Response Capacity

According to the UN Resident Coordinator in Nepal, **the government has requested international humanitarian assistance, including deployment of Urban Search and Rescue**. The Nepali government has declared a state of emergency in the affected districts (GDACS) (BBC 25/04/2015).

Kathmandu airport is reportedly operating, with no major damages reported and is not open to relief flights. Nepal has signed the customs agreement for the facilitation of emergency relief operations. It is operating slower than normal as staff is still searching for their relatives. India has deployed relief supplies, but has informed that weather conditions are creating problems for helicopters to land, with some helicopters having to turn back (GDACS).

The Ministry of Home Affairs is in charge of coordinating response (National Disaster Response Framework 2013). The National Emergency Operation Centre (NEOC) is tasked with preparing a priority work-plan for search and rescue efforts (National Disaster Response Framework 2013). The Ministry of Home Affairs and IOM have mapped all public spaces in and around Kathmandu that can be used for temporary shelters (OCHA 21/05/2013). NEOC should coordinate and assess the provision of immediate

humanitarian services, restoration of infrastructure, and protection of vulnerable groups (National Disaster Response Framework 2013).

International Response Capacity

International organisations with the capacity to respond to natural disasters in the country: IFRC Nepal, Care Nepal, Save the Children Nepal, World Vision International Nepal, UNICEF Nepal, UNHCR Nepal.

India started to send in relief flights, with search and rescue teams and aid (local media 25/04/2015). The Ministry of External Relations has established a 24-control room to assess the situation.

Information Gaps and Needs

There is no information regarding rural areas surrounding Kathmandu. Damage assessments should be a priority in order to assess the damages and affected population.

Lessons Learned

In September 2011, a 6.9 earthquake hit Sikkim state, northern India. In Nepal, the earthquake killed seven people and injured 89 (IFRC 11/06/2012). 140,550 people were affected across 18 districts (IFRC 10/02/2012). Approximately 47,040 people were displaced (IFRC 10/02/2012). The displaced stayed in self-made temporary shelters in open spaces or damaged buildings. A small minority stayed with host families (IFRC 11/06/2012). Several hundred schools and health facilities were damaged (IFRC 10/02/2012). Transport and communication were badly affected in the earthquake, creating severe challenges for humanitarian assistance (IFRC 04/10/2011). Several highways were blocked by landslides (IFRC 11/06/2012). The remoteness of the targeted population delayed assistance (IFRC 11/06/2012). Heavy rain further complicated access and worsened living conditions (IFRC 10/02/2012). The worst-affected areas closest to the epicentre were inaccessible weeks after the earthquake (CARE 13/10/2011).

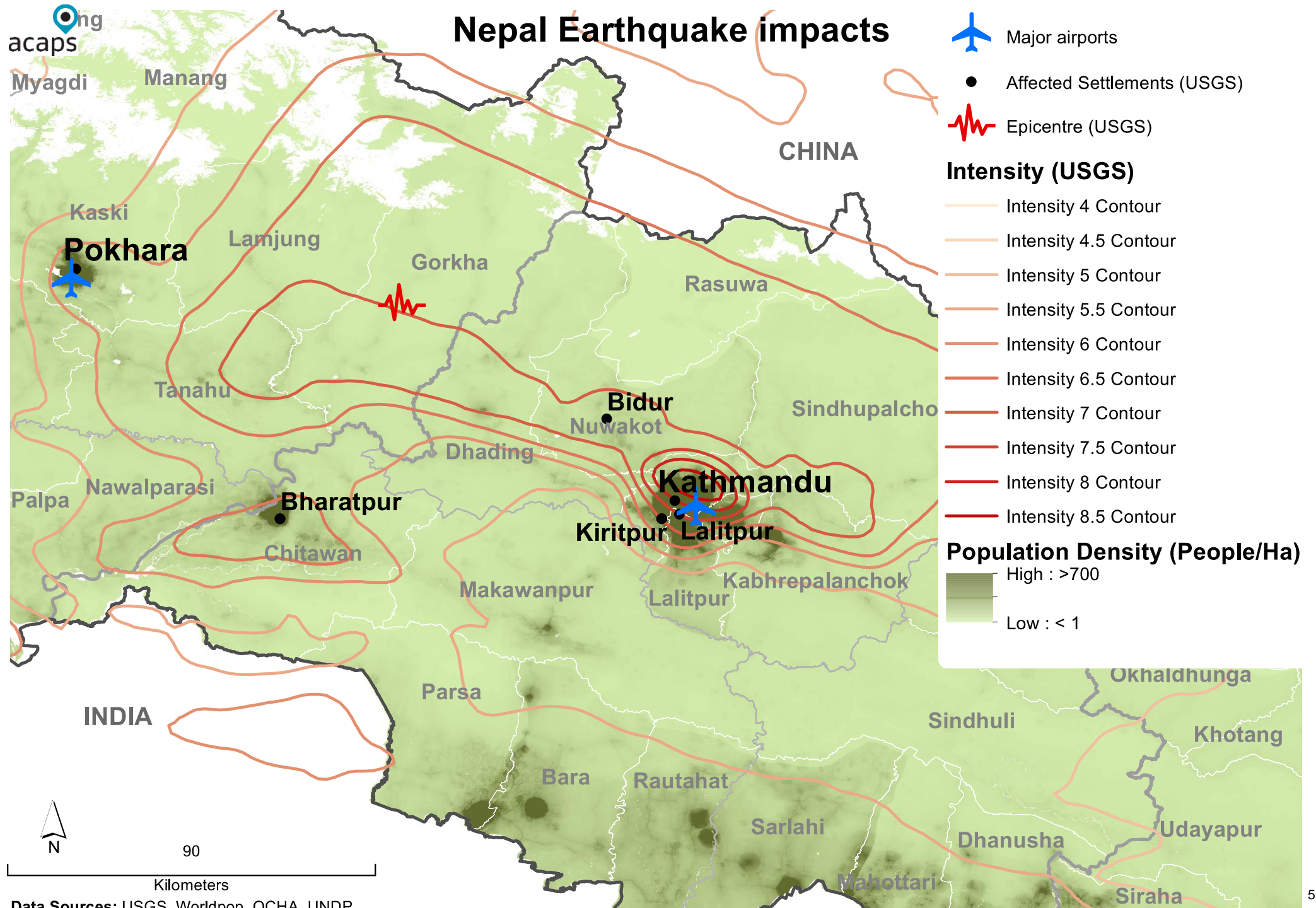
In 1988, a 6.8 earthquake killed more than 721 people and damaged 65,000 buildings in Nepal (USGS). In 1934, an 8.4 earthquake killed more than 8,500 and destroyed more than 80,000 buildings in Kathmandu valley (OCHA 21/05/2013).

Scenarios and Preparedness

In November 2014, Nepal Red Cross Society (NRCS) developed a number of tools and mechanisms to support its disaster response activities. The NRCS Earthquake Contingency Plan consists of six main parts, which provide specific information about the operating context, the response structure, the operational areas and its internal and possible external sources (NRCS 8/11/2014).

The Kathmandu valley is located in one of the most seismically active areas in the world. Various scenarios have been developed by humanitarian actors describing a potential earthquake striking Kathmandu valley. The 25 April earthquake epicentre was located 77 km from Kathmandu, and the consequences are therefore **not expected to be as severe as those presented below** (Guardian citing UN 25/04/2015). **In a worst-case scenario**, an earthquake in Kathmandu leaves 80% of buildings damaged or destroyed. Up to 2 million people are displaced (IRIN 26/04/2013). An earthquake of such magnitude would create severe access limitations. Roads and bridges would be damaged, and fuel distribution disrupted. More than 1 million people would be in need of NFIs (WFP 16/10/2009). Access to health and WASH facilities would be severely restricted (IRIN 26/04/2013). In a less severe situation, WFP expects 100,000 people to be in need of NFIs (WFP 16/10/2009). Communication and transportation would be limited and a major disruption of the water system distribution would be expected (WFP 16/10/2009).

Nepal Earthquake impacts



90

Kilometers

Data Sources: USGS, Worldpop, OCHA, UNDP