

Briefing Note Update – 26 April 2015

# Kathmadu/Nepal

## Earthquake Magnitude: 7.8

Update 1

<b>Need for international assistance</b>	Not required	Low	Moderate	Significant	Urgent
<b>Expected impact</b>	Insignificant	Minor	Moderate	Significant	Major

### 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 77km northwest of Kathmandu, and 68km east from Pokhara. Tremors have also caused damage outside Nepal.
- As of 26 April, 15:30 local time, **at least 2,200 people have died and around 4,600 more have been injured.** The situation is still unclear in remote areas, which remain cut off or hard to access.
- As of 26 April, aftershocks are still being felt. At least 18 aftershocks occurred on 25 April. **Magnitudes aftershocks have ranged from 5–6.7.**
- The government has reported that a total of 30 districts have been affected in the Western and Central Regions, including Kathmandu Valley districts. **There is no total figure of affected population yet,** but initial reports suggest the following:

Districts	Estimated Number of Affected	Region
Kaski	492,100	Western
Kavre	382,000	Central
Sindupalchowk	288,000	Central
Nuwakot	277,500	Central
Gorkha	271,000	Western
Dolakha	186,500	Central
Lamjung	167,700	Western

### Key Findings

#### Anticipated scope and scale

- Given the shallow depth of the earthquake, aftershocks are expected to continue for some time. Aftershocks are expected to cause further damage and debilitate already weak infrastructure.
- The number of casualties is expected to increase into the thousands.
- Kathmandu Valley (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 throughout the next three days and people will need shelter. Visibility and access is expected to be impaired, further hampering search and rescue efforts.

#### Priorities for humanitarian intervention

- Search and rescue;
- Health: medical and 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

The size of the geographical areas affected, scattered population and road blockages will pose serious challenges to reach affected populations.

#### Limitations

As the situation develops, ACAPS will issue additional Updated Briefing Notes.

## 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 earthquake had a magnitude of 7.8 magnitude and a depth of 2 km** (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). Although figures are changing rapidly, the latest numbers indicate **2,200 people have died in Nepal** (AFP 26/04/2015). **At least 4,600 others have been injured** (AFP 26/04/2015). There is no indication as of how many people are missing. The government has reported that **a total of 30 districts have been affected in the Western and Central Regions, including Kathmandu Valley districts** (OCHA CASS 25/04/2015).

Tremors have been felt throughout the region and have caused damage outside Nepal (Times of India 25/04/2015). As many as 51 people have been killed in **India**, in Bihar, Uttar Pradesh and West Bengal. An additional 237 have been injured so far. The number of casualties is expected to rise as further assessments are carried out (Times of India 26/04/2015). In **Tibet**, the death toll climbed to 17, according China's state news agency (Reuters 26/04/2015).

### 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:** Hospitals are overwhelmed. On 25 April, doctors were forced to treat victims in open spaces. **Medics are expecting a fresh influx of patients on 26 April as supplies run low** (BBC 26/04/2015).

**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. People slept in the open on 25 April with no protection, as aftershocks are still being felt (BBC 26/04/2015). The

poor state of Nepal's infrastructure means it will still be an enormous challenge to first locate and rescue those buried alive (BBC 25/04/2015).

**Electricity:** There is no electricity in Kathmandu. The city was under loadshedding, meaning there is no electricity for 12 hours every day before the earthquake. Electricity will be vital in hospitals and to provide protection to populations whose houses have been destroyed. It is unclear how much petrol the city has and whether more can be trucked in through damaged roads (BBC 25/04/2015).

**Communication:** There is erratic internet and mobile phone communications (BBC 26/04/2015).

### 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. Landslides have also been reported, further hampering access to more remote locations (BBC 26/04/2015). As of 26 April, **the status of the main and feeder roads outside of Kathmandu Valley is still unclear** (UNICEF 26/04/2015).

Tribhuvan International Airport in Kathmandu has sustained minimal damage and on 25 April it opened for relief flights (BBC 25/04/2015). As of 26 April, commercial flights have been allowed to land, **although reports suggest that it is opening and closing after strong aftershocks are felt** (UNICEF 26/04/2015). 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, although its unclear whether the plants have been damaged (USAID) (BBC 25/04/2015).

**Avalanches:** There were nearly 1,000 climbers and sherpas on Mt. Everest when the first avalanche struck. 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 (Reuters 26/04/2015). Reports have suggested that some base camps are still covered in snow. **As of 26 April, the death toll in Mt. Everest had reached 17, with 61 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. Helicopters trying to airlift the injured to Kathmandu were delayed by cloudy weather, but have now managed to land at the base camp (international media 25/04/2015) (BBC 26/04/2015).

## Vulnerable Groups Affected

Children, women, the elderly and people with disabilities are particularly vulnerable, as they are more difficult to move to open areas. Gender is an important consideration in earthquakes because earthquakes usually kill more women than men (ALNAP 2008).

## Humanitarian and Operational Constraints

- A major challenge is poor physical connectivity and 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.

## 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).

### 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. The poor state of the country's infrastructure means it will still be an enormous challenge to first locate and rescue those buried alive (BBC 25/04/2015). 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-weathered 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).

### 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).
- **Population Density:** Population density (people per sq. km) in Nepal: 209
- **Rural and Urban Population:** % Rural population is 81.1; % Urban Population: 18.2 (World Bank).
- **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).

## Response Capacity

### Local and National Response Capacity

On 25 April, **the government has requested international humanitarian assistance, including deployment of Urban Search and Rescue**. It also declared a state of emergency in the affected districts (USAID 26/04/2015).

The Government is planning to set up camps for displaced population in Kathmandu and other affected districts. The Government has held an emergency meeting of their Central Natural Disaster Relief Committee (CNDRC) followed by meetings with Cabinet and the humanitarian community. The Government is also

trying to mobilize heavy equipment to remove rubbles and carry out search and rescue operations. To this end, the governments of China and India have offered the use of their military assets to support the response (UNICEF 25/04/2015).

Kathmandu airport is reportedly operating, with no major damages reported and is **open to relief flights**. As of 26 April, reports indicate that it is also open to commercial flights. Nepal has signed the customs agreement for the facilitation of emergency relief operations.

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, IOM, Care Nepal, Save the Children Nepal, World Vision International Nepal, UNICEF Nepal, UNHCR Nepal.

As of 26 April, **India** has already sent several aircraft carrying medical supplies and a mobile hospital, as well as search and rescue teams and rescue dogs. The **US** is sending a disaster response team and has released an initial \$1 million (USAID 26/04/2015). The **UK** is sending a team of humanitarian experts. **Pakistan** is sending aircrafts carrying a field hospital, army doctors and specialist, an urban search and rescue team, rescue dogs, food items and NFIs. **Norway** has promised \$3.9 million in humanitarian assistance. Additionally, China, Germany, Spain, France, Israel and European Union have already pledged aid (BBC 26/04/2015).

### 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. As the situation is developing, ACAPS will provide updates regarding total number of people affected and casualties.

There is critical need to assess the condition of roads and connectivity with more remote areas.

### Lessons Learned

In 2008, ALNAP published a comprehensive report on lessons learned from 30 years of earthquake response. Some of the main findings are presented here: Following an earthquake, **humanitarian agencies should attempt to change its focus from relief to recovery activities as soon as possible**. After a major disaster, the **recovery time should be expected to last at least three to five years**. Finding solutions for permanent shelter needs to be a priority, and **should not be neglected in favour of emergency shelter**. The local population needs to be heard and included in the recovery processes, in particular in terms of livelihood recovery. **Focus on vulnerable groups in recovery interventions needs to be a priority, as disasters tend to increase inequalities**. Recovery efforts should include risk-reduction strategies for future earthquakes (ALNAP 2008).

The Nepal Risk Reduction Consortium has been leading efforts to increase preparedness for natural disasters in and around Kathmandu valley. These programmes include improving school and hospital safety through physical and operational strengthening. Focus has also been placed on **improving preparedness for the facilitation of international humanitarian assistance**, in particular coordination strategies (NRRC 22/08/2013). 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 2007 evaluation of the Early Recovery Plan from the **2005 Pakistan earthquake** maintains that flexibility and coordination are key to the successful delivery of humanitarian assistance. **Communication between national and local authorities and humanitarian agencies is vital** to ensure assistance both in the immediate and prolonged aftermath of a disaster. The transition between acute assistance and sustainable programmes in several sectors, including health and shelter, proved a challenge. Reconstruction efforts benefitted from humanitarian agencies **shifting focus from building houses to supporting beneficiaries to rebuild their own homes in a safer way**. Conducting a

thorough vulnerability survey, and communicating the findings to key officials, should be a priority (ERRA-UN 2007).

20 months after the 2010 Haiti earthquake, the Inter-Agency Standing Committee (IASC) highlighted the main shortcomings in the relief effort: **durable solutions, livelihoods, continued shelter, communication, and the provision of continued support**. The evaluation further pointed out that the humanitarian assistance after the earthquake **had not sufficiently adapted to the fast-changing reality on the ground**. Humanitarian actors did not sufficiently interact with the Government of Haiti and other national actors, thereby creating further constraints to the delivery of aid. Another major constraint was the limited funding allocated to durable solutions and reconstruction processes (IASC 2011). There is a need to rethink the end goal of humanitarian assistance and move from a service delivery approach to a capacity empowering framework, or in other words to shift the emphasis from only delivery to support and facilitation (ALNAP 07/2006).

ACAPS is currently drafting a Lessons-Learned document intended for the Nepal Earthquake, to be published on 27 April.

## Scenarios

The Kathmandu valley is located in one of the most seismically active areas in the world. 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).

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).



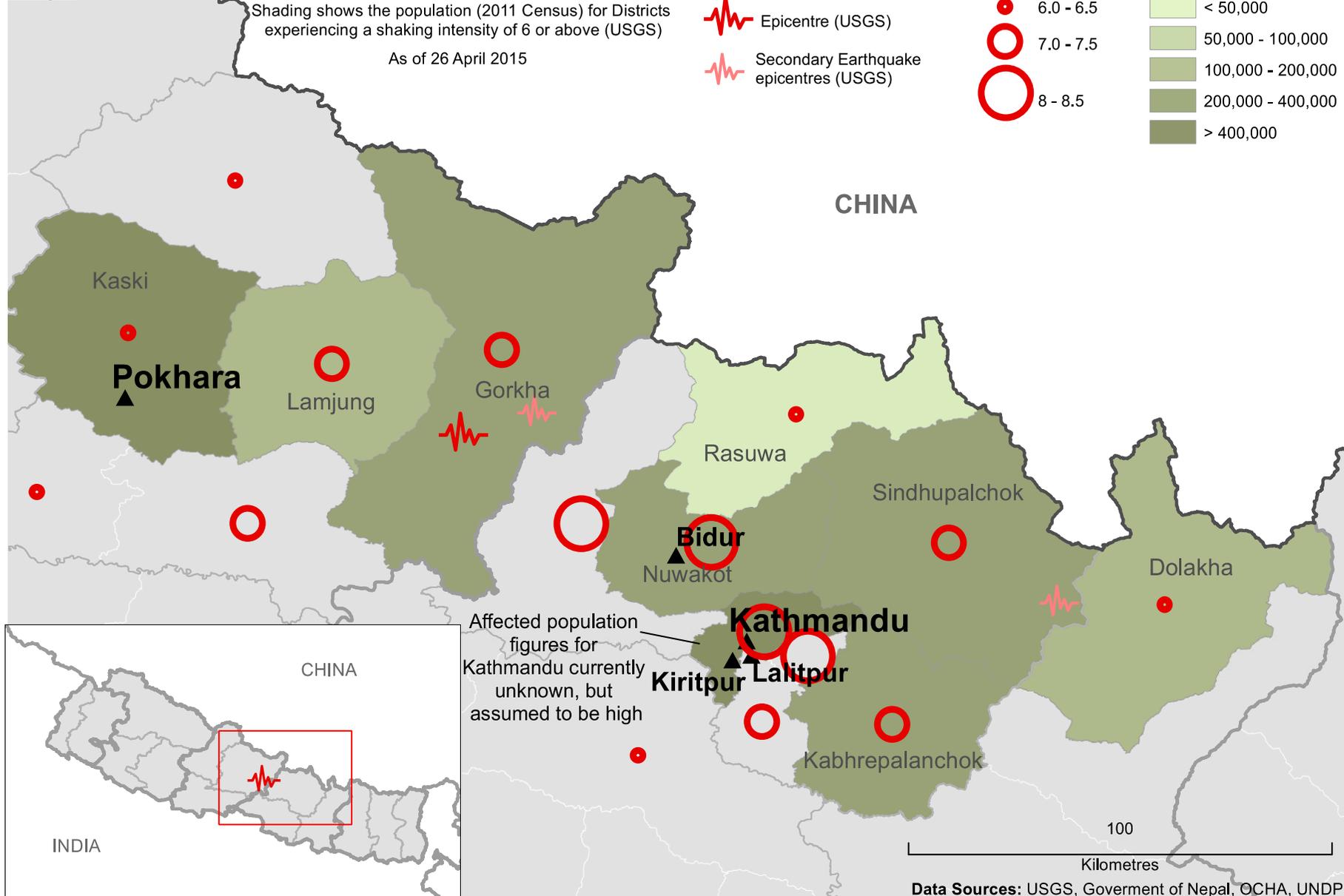
# Nepal Earthquake impacts

Shading shows the population (2011 Census) for Districts experiencing a shaking intensity of 6 or above (USGS)

As of 26 April 2015

- Affected Settlements (USGS)
- Epicentre (USGS)
- Secondary Earthquake epicentres (USGS)

Shaking Intensity		Affected Population	
	6.0 - 6.5		< 50,000
	7.0 - 7.5		50,000 - 100,000
	8 - 8.5		100,000 - 200,000
			200,000 - 400,000
			> 400,000



Affected population figures for Kathmandu currently unknown, but assumed to be high

Data Sources: USGS, Government of Nepal, OCHA, UNDP