

Briefing Note – 11 September 2017

# MEXICO AND GUATEMALA Earthquake



**Epicentre: Pacific Ocean, 8km southwest of Pijijiapan, Chiapas state in Mexico**

**Magnitude in Mexico: 8.1**

**Magnitude in Guatemala: 7.6**

	Not required	Low	Moderate	Significant	Major
Need for international assistance	Very low	Low	Moderate	Significant	Major
Expected impact	Very low	Low	Moderate	Significant	Major

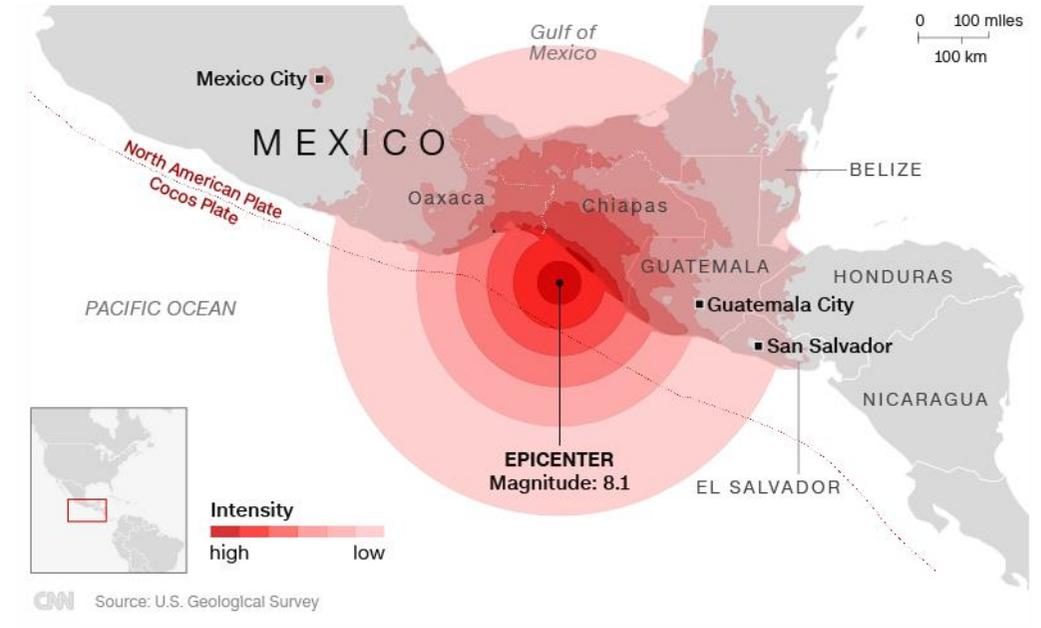
## Crisis overview

On 7 September, an 8.1 magnitude earthquake struck Mexico's southern Pacific Coast, about 8km southwest of Pijijiapan in Chiapas state. A related 7.6 earthquake occurred in Guatemala the same evening. Aftershocks were still being reported in Mexico as of 10 September.

In Mexico, 90 people were killed and at least 200 injured. Chiapas, Oaxaca, and Tabasco states were most affected. Damage to shelter has been reported, with people still sleeping outdoors for fear of more collapses. Health and school infrastructures also suffered damage, mostly in Oaxaca state. There are concerns that food shortages will arise as shops remain closed and road damage restricts movement.

In Guatemala, an estimated 4,500 people were affected. No casualties were reported but two people were injured. Most affected departments were Huehuetenango, Quetzaltenango, Quiché, San Marcos, Suchitepéquez and Totonicapán. Houses were damaged and health and education provision disrupted.

## Earthquake epicenter



Source: CNN 10/09/2017

## Key findings

### Anticipated scope and scale

The earthquake affected several states of Mexico, most notably Chiapas, Oaxaca, and Tabasco states, while resulting in minor damage in Guatemala. Shelter destruction and damage to health and education infrastructure is most notable. However, there are also risks of food shortages in Oaxaca in Mexico as stores remain closed and prices are increasing. Ongoing floods in Guatemala and recent mudslides in Mexico create additional vulnerabilities. Response is likely to be hampered by damaged infrastructure and heavy rains, which will maintain needs and increase the risk of disease spreading. More rains are forecasted in the next few days.

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| <b>Key priorities</b> | <ul style="list-style-type: none"> <li>• <b>Shelter:</b> Houses were severely damaged in affected areas of both Mexico and Guatemala, increasing shelter needs as some people are sleeping outside in Mexico.</li> <li>• <b>Health:</b> In Juchitán in Oaxaca, Mexico, one of the areas most affected by the earthquake, the main hospital collapsed, creating severe disruptions to medical services. Power cuts also interrupted medical services in affected areas in Guatemala. Health risks are heightened by ongoing floods.</li> </ul> |
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<b>Humanitarian constraints</b>	Aftershocks as well as damaged roads in affected areas are likely to restrict aid delivery. Heavy rains and ongoing floods are also likely to limit movement and hamper humanitarian operations.
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#### Limitations

Lack of sectoral information on needs.

Lack of information on logistical constraints.

## Crisis impact

On 7 September, an 8.2 magnitude earthquake struck Mexico's southern Pacific Coast, about 8 km south west of Pijijiapan in Chiapas state. This triggered a 1m high tsunami but no associated damage was reported (VOA News 10/09/2017). A related 7.7 earthquake was felt in Guatemala the same evening (VOA News 10/09/2017). Aftershocks were still being felt in Mexico as of 10 September (Washington Post 10/09/2017). The earthquake is of bigger magnitude than the 1985 earthquake that killed 5,000 people in Mexico (VOA News 10/09/2017).

In Mexico, 90 people were killed, and at least 200 injured (VOA News 10/09/2017, IFRC 08/09/2017). Chiapas, Oaxaca, and Tabasco states were most affected, and most fatalities were reported in the town of Juchitán in Oaxaca (VOA News 10/09/2017, IFRC 08/09/2017, ECHO 09/09/2017). Up to 10,000 people were evacuated to shelters, including at least 4,500 from Chiapas (ECHO 09/09/2017, Reforma 08/09/2017).

In Guatemala, an estimated 4,500 people were affected. No casualties were reported but two people were injured. 81 people lost their homes (IFRC 08/09/2017, CONRED 09/09/2017). Most affected departments were Huehuetenango, Quetzaltenango, Quiché, San Marcos,

Suchitepéquez, and Totonicapán (IFRC 08/09/2017). 90 people were reportedly evacuated country-wide (CONRED 09/09/2017).

## Mexico

**Shelter:** Damage to houses was mostly reported in Oaxaca, Chiapas, and Tabasco states (Washington Post 09/09/2017). In Chiapas, 400 houses have been destroyed and an additional 1,700 damaged (NY Times 08/09/2017). In Juchitán in Oaxaca, an estimated 20% to 30% of the houses were destroyed, according to local authorities, and 5,000 were damaged (NY Times 08/09/2017, UNICEF 10/09/2017). Anecdotal evidence suggests that people are sleeping outside because of fear that aftershocks will further damage their houses (Washington Post 09/09/2017).

**Health:** In Juchitán in Oaxaca, the main hospital collapsed, forcing the relocation of at least 100 patients (Government of Mexico 09/09/2017). At least eight hospitals were damaged in Chiapas (UNICEF 08/09/2017). Minor damage to hospital roofs is also reported throughout the country (IFRC 08/09/2017).

Power cuts also disrupted hospital services notably in Chiapas (Connect Statesboro 10/09/2017).

**Food:** Many stores have closed in Juchitán in Oaxaca, Mexico, leading to a significant increase in food prices. There are fears of possible looting of stores, potentially impacting on access food, as well as leading to food shortages (Washington Post 09/09/2017).

**Education:** 1,140 schools were affected by the earthquake in 12 states of Mexico, with six of them almost completely destroyed, 30 report partial damage and the rest have minor damage (Government of Mexico 09/09/2017). Schools in at least 10 states of Mexico and in Mexico City were closed on 8 September, disrupting classes (NY Times 08/09/2017).

## Guatemala

**Shelter:** 212 houses were affected by the earthquake, including 61 severely damaged and 19 moderately damaged country-wide (IFRC 08/09/2017, CONRED 09/09/2017).

**Health:** Services provided by the Quetzaltenango hospital were disrupted due to some damage (Prensa Libre 08/09/2017).

**Education:** Classes were suspended in San Marcos, Quetzaltenango and Suchitepéquez departments (IFRC 08/09/2017).

## Impact on critical infrastructure

### Mexico

Electricity services were disrupted for an estimated 1.85 million people in Mexico. As of 8 September, 1.66 million have power restored (IFRC 08/09/2017).

### Guatemala

Three roads were damaged by the earthquake, and the telecommunications and energy supplies for one million people were disrupted but quickly re-established for the large majority (IFRC 08/09/2017). The Selegua bridge in Huehuetenango suffered damages (CONRED 09/09/2017).

### Humanitarian and operational constraints

Aftershocks are still felt as of 10 September, which disrupts aid distribution notably in Juchitán in Oaxaca, Mexico (Inquierer.net 10/09/2017). Debris on roads in affected areas is likely to impede movement. Damaged roads in both Mexico and Guatemala are also likely to limit operations. Heavy rains and flooding ongoing in Guatemala, and increasing in Mexico, is likely to affect mobility.

## Aggravating factors

### Mexico

**Hurricane/tropical storm season:** In Mexico, Hurricane Katia is likely to pose challenges for aid delivery (ECHO 09/09/2017). On 8 September, it hit Veracruz, on the east coast of Mexico, resulting in mudslides, and it is currently heading northwest towards Mexico City (The Sun 10/09/2017). Heavy rains are currently reported in Oaxaca which resulted in at least four fatalities and mudslides (Jornada 08/09/2017). In the 72 hours following September 10, Chiapas, Tabasco, and Oaxaca states, which were most affected by the earthquake, are on high alert for rains (NVI Noticias 10/09/2017). Flooding and landslides in already vulnerable areas are likely to accelerate the spread of diseases and significantly increase the needs of populations.

**Housing type:** Not all constructions in the regions affected by the earthquake in Mexico are earthquake resistant. Some housing in the states affected are vulnerable building types made of adobe block with concrete bond beam and mud wall constructions. This weakens these buildings' resistance to the earthquake (UNITAR 08/09/2017).

**Poverty:** Oaxaca and Chiapas states, which were most affected by the earthquake, are among the states that record the highest levels of poverty in the whole of Mexico. Some

reports suggest that indigenous communities in those states suffer from poverty levels four times higher than the national average (Huffington Post 08/10/2015). This increases these communities' vulnerability to natural disasters, their needs and capacity to recover.

### Guatemala

**Rainy season:** Over 200,000 people in Guatemala have been affected by the rainy season that started in mid-April, and 676 people are in shelters. Floods resulted in severe damage to houses and facilities country-wide (La Hora 03/08/2017, 20minutos 18/08/2017). The road network has been damaged, which likely will restrict aid delivery (La Hora 03/08/2017). This likely increases the vulnerability of people affected by the earthquake, as well as the capacity of the government to respond as well as the provision of basic services. Guatemala continues to be on high alert for heavy rains (Notimerica 02/09/2017).

**Housing type:** Houses made of adobe block with concrete bond beam and mud wall constructions are also reported in Guatemala and are vulnerable to earthquakes (Prensa Libre 08/09/2017).

**Food insecurity:** Between August and September 2017, several departments in the west of Guatemala face pockets of Crisis (IPC 3) food security outcomes, including in those areas affected by the earthquake (FEWSNET 08/09/2017). Poor households who have limited access to markets and livelihoods are likely to be more vulnerable to service disruptions.

## Response capacity

### Local and national response capacity

The Mexican National Coordination of Civil Protection activated the Fund for Emergency Care (FONDEN) and is coordinating local response (Government of Mexico 08/09/2017). The Mexican military has been deployed to affected areas and police officers are conducting search and rescue operations. The military has been helping in restoring water and food supplies and shipping medical care and basic supplies.

In Guatemala, the National Coordinator for Disaster Reduction (CONRED) is responding (CONRED 09/09/2017).

### International response capacity

International humanitarian organisations, including the UN, have started mobilising to respond to the earthquake in Mexico (International Medical Corps 08/09/2017, UNICEF 08/09/2017, Direct Relief 08/09/2017). The Mexican Red Cross has been mobilised for coordination and assessment actions and opened collection centres in Chiapas state (IFRC 08/09/2017)

The Guatemala Red Cross is working with the National Coordinator for Disaster Reduction (CONRED) and local authorities to conduct damage assessment and needs analysis and is assisting communities in the most affected states (IFRC 08/09/2017).

## Information gaps and needs

- Lack of information on specific sectoral needs in each state of each country.
- Limited information on logistical impact.

## Key characteristics

Key indicators	Mexico	Guatemala
Total population	123,166,749	15,189,958
% population in rural areas	20%	49%
Gender and age distribution of population	<p><b>Gender:</b> 0.96 male/female</p> <p><b>Age:</b></p> <p>0-14 years: 27.26%</p> <p>15-24 years: 17.72%</p> <p>25-54 years: 40.69%</p> <p>55-64 years: 7.41%</p> <p>65 years and over: 6.93%</p>	<p><b>Gender:</b> 0.87 male/female</p> <p><b>Age:</b></p> <p>0-14 years: 35.02%</p> <p>15-24 years: 21.8%</p> <p>25-54 years: 33.53%</p> <p>55-64 years: 5.23%</p> <p>65 years and over: 4.42%</p>
State capital	Mexico City	Guatemala City
WASH figures	<p><b>Sanitation facility access:</b></p> <p>improved:</p> <p>urban: 88% of population</p> <p>rural: 74.5% of population</p> <p>total: 85.2% of population</p> <p>unimproved:</p> <p>urban: 12% of population</p> <p>rural: 25.5% of population</p> <p>total: 14.8% of population</p> <p><b>Drinking water source:</b></p> <p>improved:</p> <p>urban: 97.2% of population</p> <p>rural: 92.1% of population</p> <p>total: 96.1% of population</p> <p>unimproved:</p> <p>urban: 2.8% of population</p> <p>rural: 7.9% of population</p> <p>total: 3.9% of population</p>	<p><b>Sanitation facility access:</b></p> <p>improved:</p> <p>urban: 77.5% of population</p> <p>rural: 49.3% of population</p> <p>total: 63.9% of population</p> <p>unimproved:</p> <p>urban: 22.5% of population</p> <p>rural: 50.7% of population</p> <p>total: 36.1% of population</p> <p><b>Drinking water source:</b></p> <p>improved:</p> <p>urban: 98.4% of population</p> <p>rural: 86.8% of population</p> <p>total: 92.8% of population</p> <p>unimproved:</p> <p>urban: 1.6% of population</p> <p>rural: 13.2% of population</p> <p>total: 7.2% of population</p>

Health figures	<b>Maternal mortality rate:</b> 38 per 100,000 live births <b>Under five mortality rate:</b> 13 per 1,000 live births	<b>Maternal mortality rate:</b> 88 per 100,000 live births <b>Under five mortality rate:</b> 29 per 1,000 live births
Literacy rates	95.1%	81.5%