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Earthquake Shaking Red Alert

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GSN ANSS

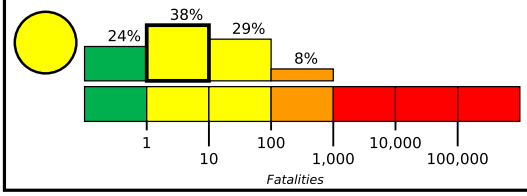
# M 5.9, 39 km WNW of Linxia Chengguanzhen, China

Origin Time: 2023-12-18 15:59:30 UTC (Mon 23:59:30 local)
Location: 35.7377° N 102.8059° E Depth: 10.0 km

**PAGER Version 9**

Created: 3 weeks, 5 days after earthquake

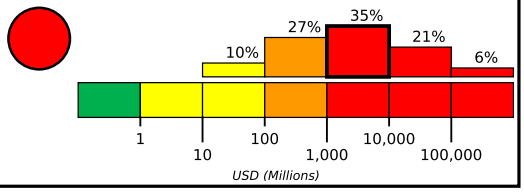
## Estimated Fatalities




Red alert for economic losses. Extensive damage is probable and the disaster is likely widespread. Estimated economic losses are less than 1% of GDP of China. Past events with this alert level have required a national or international level response.

Yellow alert for shaking-related fatalities. Some casualties are possible.

## Estimated Economic Losses



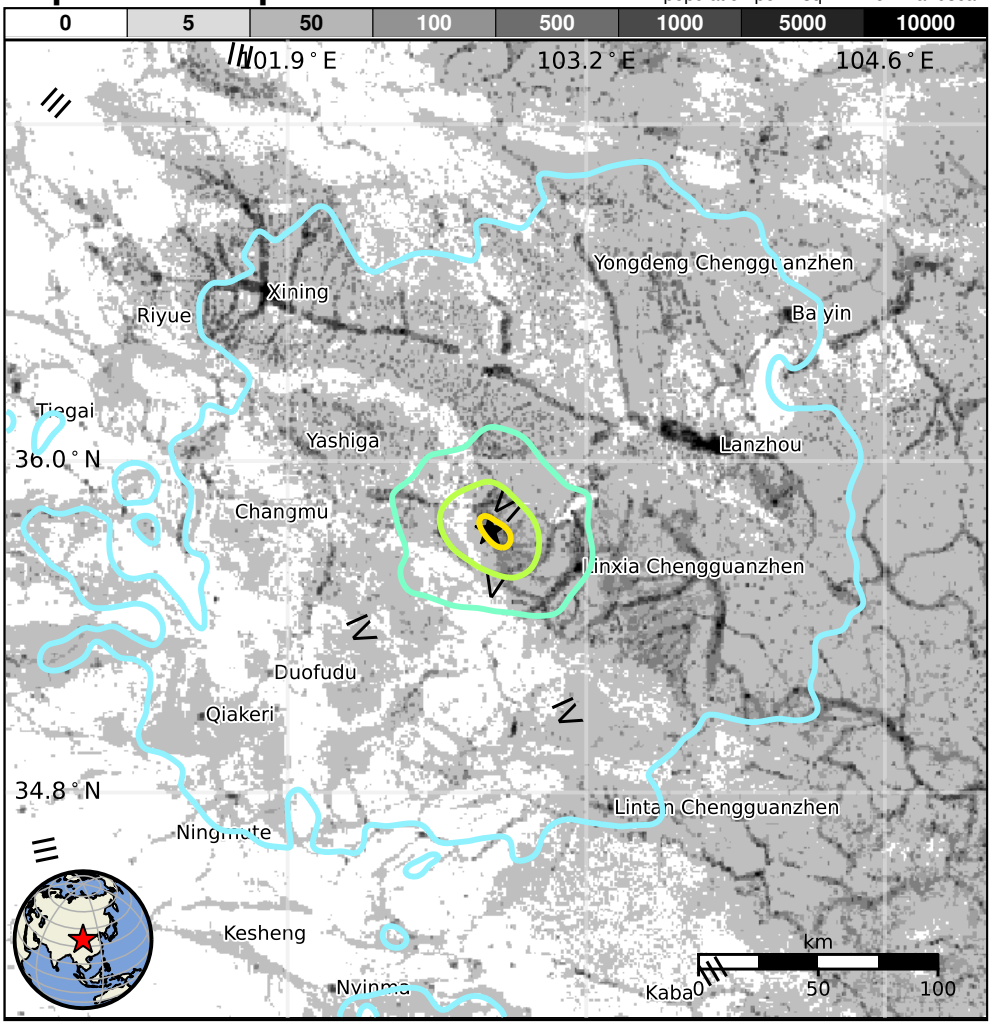

## Estimated Population Exposed to Earthquake Shaking

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ESTIMATED POPULATION EXPOSURE (k=x1000) | | –* | 5,233k* | 10,250k | 919k | 174k | 108k | 0 | 0 | 0 |
| ESTIMATED MODIFIED MERCALLI INTENSITY | | I | II-III | IV | V | VI | VII | VIII | IX | X+ |
| PERCEIVED SHAKING | | Not felt | Weak | Light | Moderate | Strong | Very Strong | Severe | Violent | Extreme |
| POTENTIAL DAMAGE | Resistant Structures | None | None | None | V. Light | Light | Moderate | Mod./Heavy | Heavy | V. Heavy |
| | Vulnerable Structures | None | None | None | Light | Moderate | Mod./Heavy | Heavy | V. Heavy | V. Heavy |

*Estimated exposure only includes population within the map area.

## Population Exposure

population per 1 sq. km from Landscan




## Structures

Overall, the population in this region resides in structures that are vulnerable to earthquake shaking, though resistant structures exist. The predominant vulnerable building types are adobe block and unreinforced brick with mud construction.

## Historical Earthquakes

| Date (UTC) | Dist. (km) | Mag. | Max MMI(#) | Shaking Deaths |
|---|---|---|---|---|
| 1995-07-21 | 84 | 5.6 | VII(7k) | 14 |
| 2003-10-25 | 335 | 5.8 | VIII(6k) | 9 |
| 1990-04-26 | 232 | 6.2 | IX(6k) | 119 |

Recent earthquakes in this area have caused secondary hazards such as landslides that might have contributed to losses.

## Selected City Exposure

from GeoNames.org

| MMI | City | Population |
|---|---|---|
| VII | Shiyuan | <1k |
| VII | Liuji | <1k |
| VII | Chuimatan | <1k |
| VII | Liugou | <1k |
| VII | Zhaizigou | <1k |
| VII | Dahejia | <1k |
| VII | Sibaozi | <1k |
| **V** | **Linxia Chengguanzhen** | **202k** |
| **IV** | **Lanzhou** | **2,628k** |
| **IV** | **Baiyin** | **189k** |
| **IV** | **Xining** | **768k** |

bold cities appear on map. (k=x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.

**https://earthquake.usgs.gov/earthquakes/eventpage/us7000ljvg#pager**

**Event ID: us7000ljvg**