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Earthquake Shaking Red Alert

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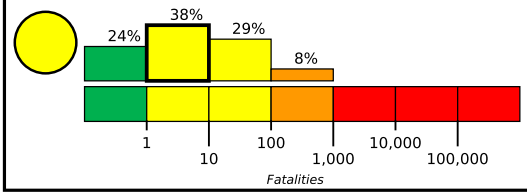
M 5.9, 39 km WNW of Linxia Chengguanzhen, China

Origin Time: 2023-12-18 15:59:30 UTC (Mon 23:59:30 local)
Location: 35.7389° N 102.8047° E Depth: 10.0 km

PAGER Version 8

Created: 2 weeks, 2 days after earthquake

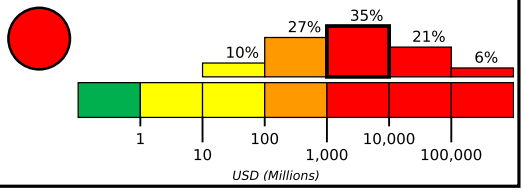
Estimated Fatalities



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



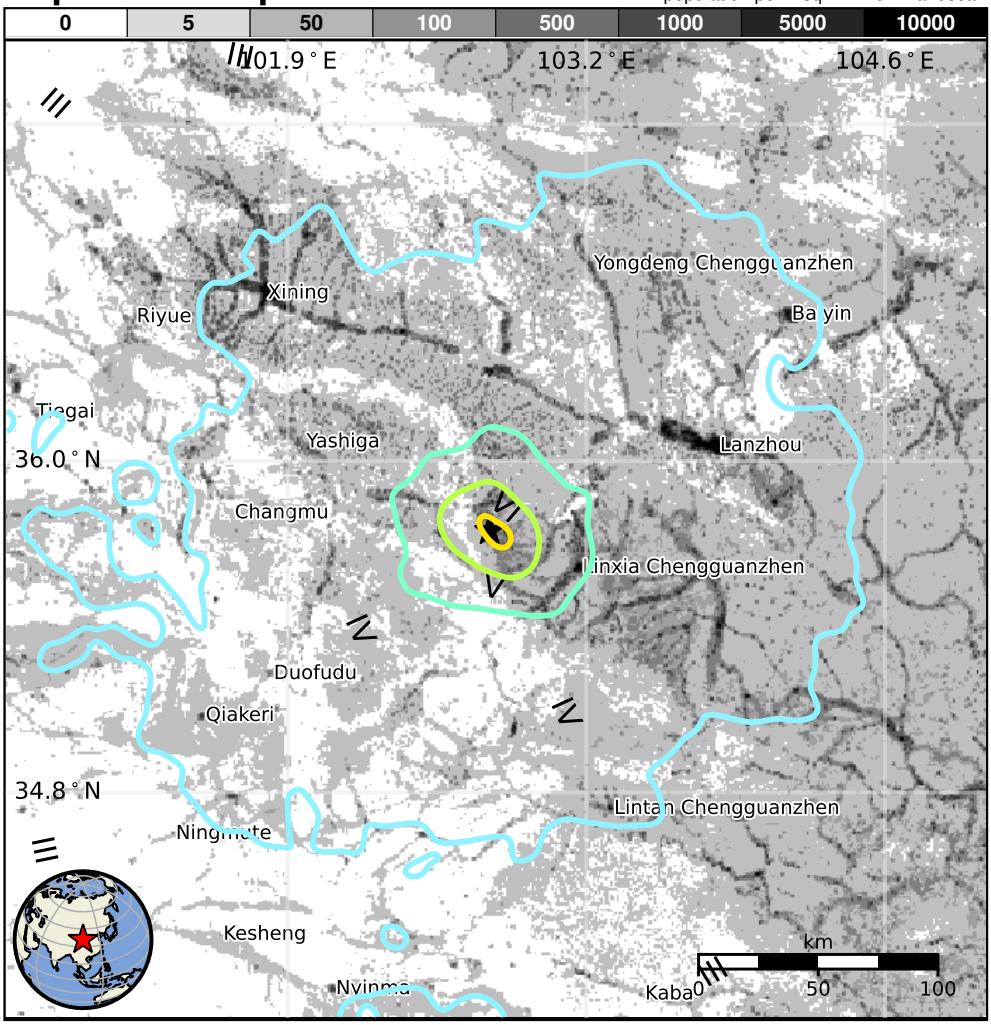
Estimated Population Exposed to Earthquake Shaking

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