

**CEDIM Forensic Disaster Analysis Group – Impact Summary No.2**

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Official Disaster Name	Date	UTC	Local	CEDIMFDA_ID
<b>Iquique Earthquake</b>	<b>01-Apr-2014</b>	<b>23:46:49</b>	<b>-5</b>	<b>Non-FDA</b>

**Preferred Hazard Information:**

EQ_Latitude	EQ_Longitude	Magnitude	Hyp_Depth (km)	Fault Mech.	Source	Spectra
<b>-70.73</b>	<b>-19.59</b>	<b>8.1Mw</b>	<b>34</b>	<b>thrust</b>	<b>GFZ</b>	<b>None avail.</b>

\*M7.6 aftershock

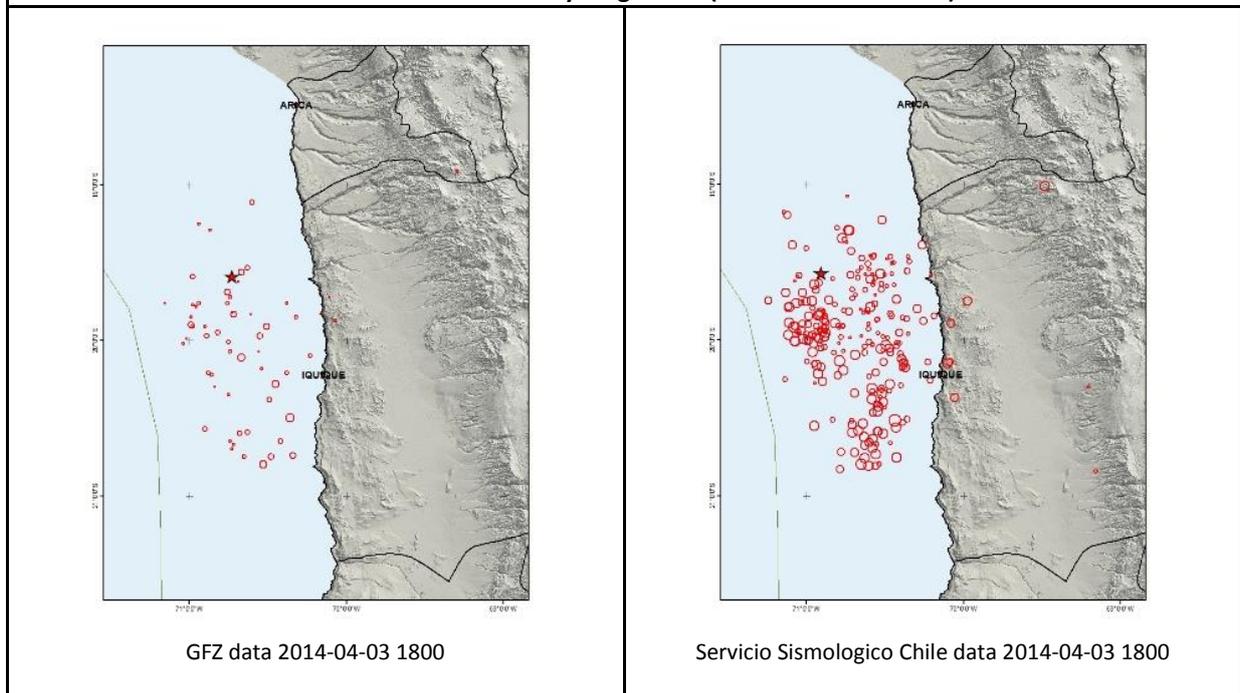
**Location Information:**

Country	ISO	District	Most Impact	BPF	HDI	Urbanity	Corruption
<b>Chile</b>	<b>CL</b>	<b>Region I</b>	<b>Iquique</b>	<b>91/100</b>	<b>0.823-High</b>	<b>V. High</b>	<b>7.1</b>

**Preferred Hazard Information:**

MSK-64	MMI	EMS-98	Key Hazard Metrics
7.5	7	7	(VII) Iquique, Arica, (VI) Las Yaras, Tacna, (V) Ilo, Calama
Hazard Description (Intensities and Ground Motion)			

**Aftershock data scaled by magnitude (mainshock = red star)**



All absolute values for this earthquake should be treated with caution and are estimates!

**What have been the 3 largest comparable damaging events in the past?**

Date	Impact Size	Damage %	Social % or Insured %	Economic Loss
1987	Mw 7.2 (VII)	1000 houses damaged	5 deaths, 5000 h'less	Ca. \$1m USD
1911	Mw 7.1	Damage to nitrate industry	20 deaths	Major
1877	Mw 8.8	Major damage, tsunamis	Ca. 2500 deaths	Major (also war)

\*2005 saw a major Mw7.8 earthquake killing 11 people and causing landslides in the region of Iquique, however this was an intermediate depth earthquake at 100km depth, 1981 also saw a minor Mw5.8 earthquake with 10 deaths. (CATDAT)

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**Preferred Building Damage Information:**

There have been around 70 buildings designated as uninhabitable in Huara, and around 200 in total including Alto Hospicio. Around 2400 additional buildings damaged. 68 damaged in Peru.	<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>L4</b>
	Ca. 2500		Ca. 200	
	Earthquake Report, INDECI, ONEMI and News reports			

**Secondary Effect Information:**

Type	Impact	Damage %	Social %	Economic %
Tsunami	1-2 m height, boats damaged	Minor	0 deaths	Minor
Landslides	Few roads closed and damaged	Minor	Unconfirmed deaths	Minor

**Preferred Social Impact Information:**

Type	Median	Accepted Range	Description	Source
Deaths	6	6-6	Heart attacks, landslides	News
Injuries	25	25+	9 in Peru, at least 16 in Chile	
Homeless	Around 1000	500-1500	Around 200 homes	News
Affected	900000		900000 evacuated	News
Indirect SE				

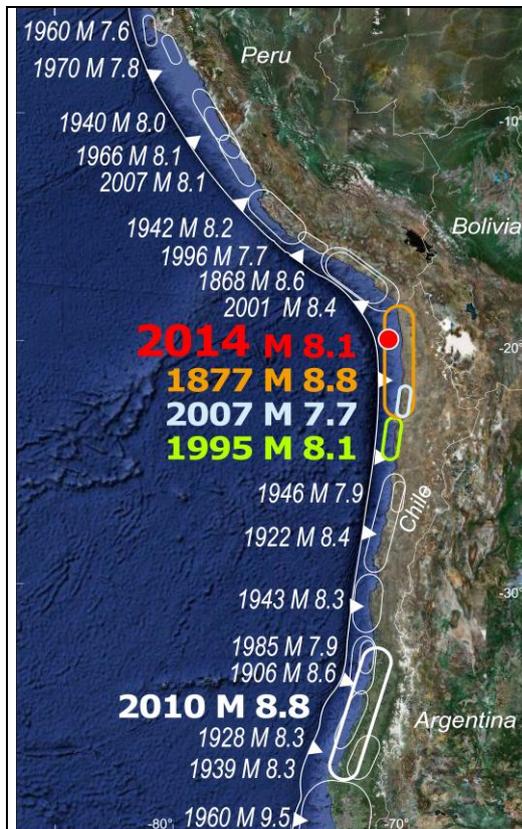
**Preferred Current Economic Impact Information:** \$million int. event-day dollars

Type	Description	Source
Total Losses	Unknown, but around \$20 million USD estimated.	Rapid Loss
Insured Losses	Very little damage to the mining industry. Some roads and business interruption expected, but very much in the order of less than \$10m.	Rapid Loss
Aid Impact	Minimal	

<b>CATDAT Economic Index Rank:</b>	5 (Moderate)	<b>CATDAT Social Index Rank:</b>	6 (Red, few deaths)
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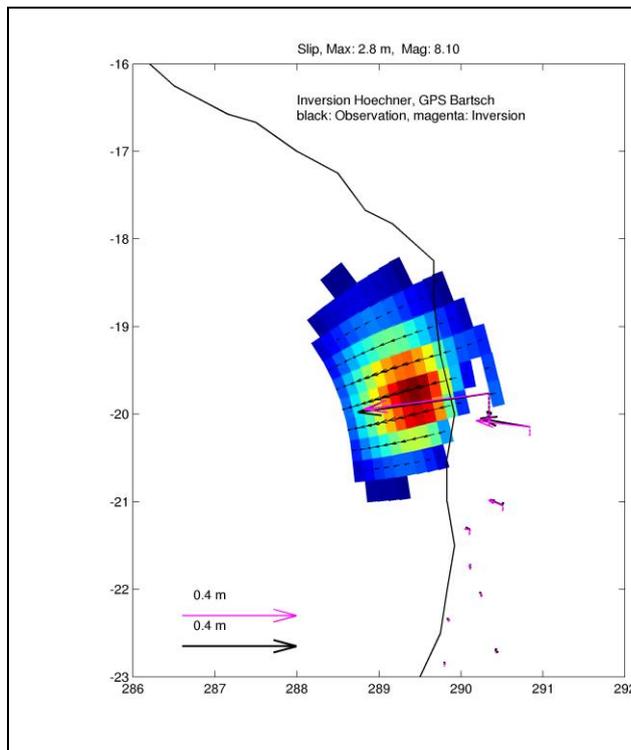
**Additional seismological information:**

<b>Historic seismicity</b>
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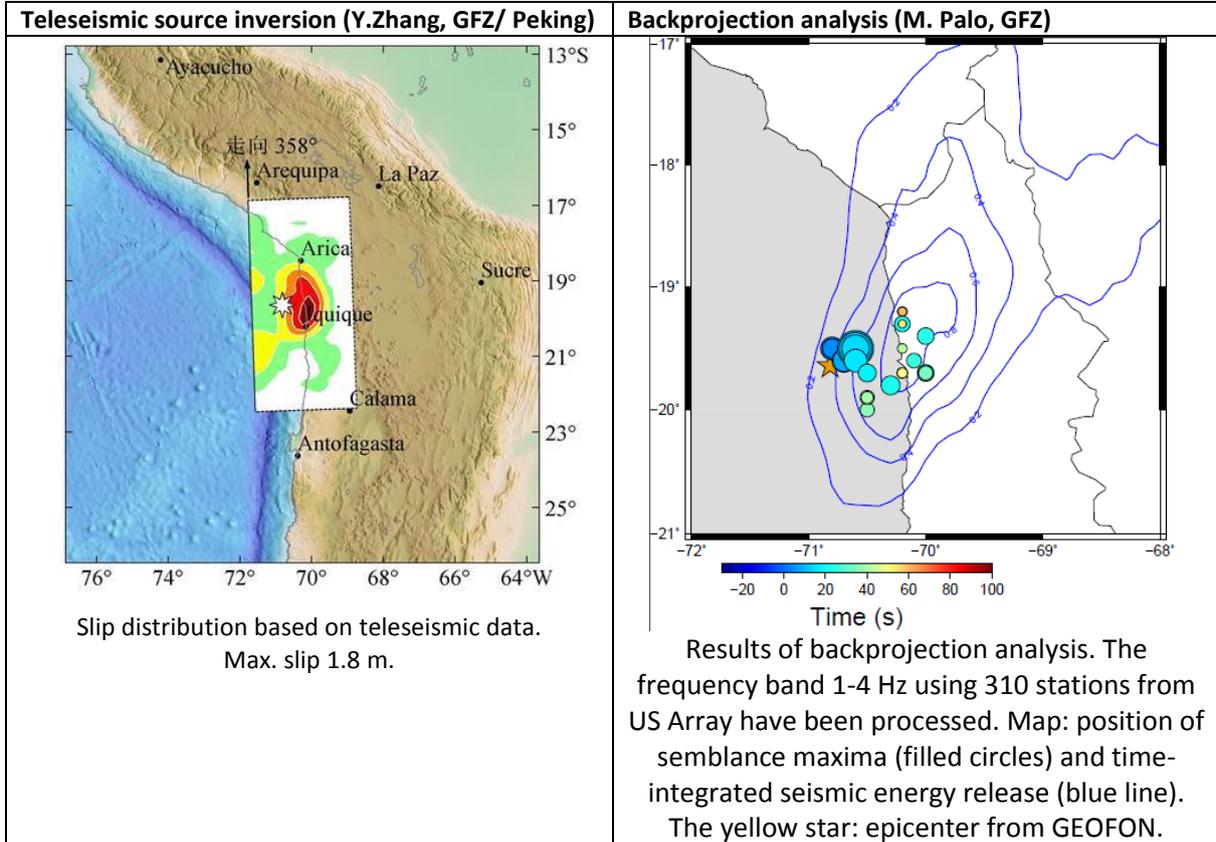
Major historic earthquakes along the Chilean subduction zone.

The earthquake on Apr 1 occurred in a region of historic seismic quiescence, the Northern Chile seismic gap. The initial location is placed near the northern end of the seismic gap. The last significant earthquakes occurred in 1877 (M 8.8). Since then the region was quiet and built up stress for the last 130 years. A recent increase in seismicity has occurred just before the Mw 8.2 event, including a Mw6.7 event and three Mw 6.2 events in March.



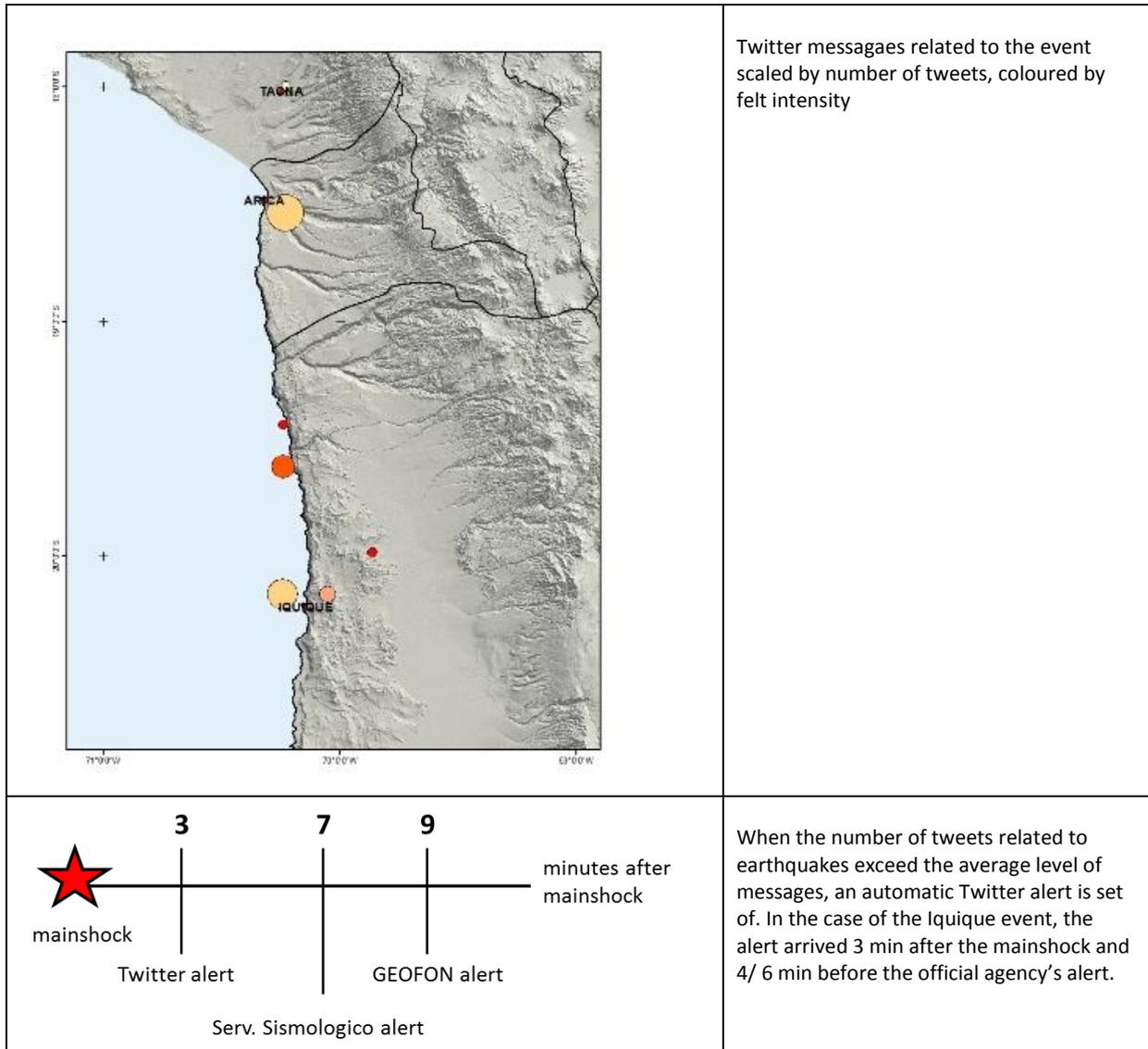
**Slip distribution (A. Hoechner, GFZ)**

Slip distribution based on GPS data. Max. slip 2.8 m.



Social Sensors (S. Eggert, J. Fohringer, GFZ; A. Dittrich, KIT):

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