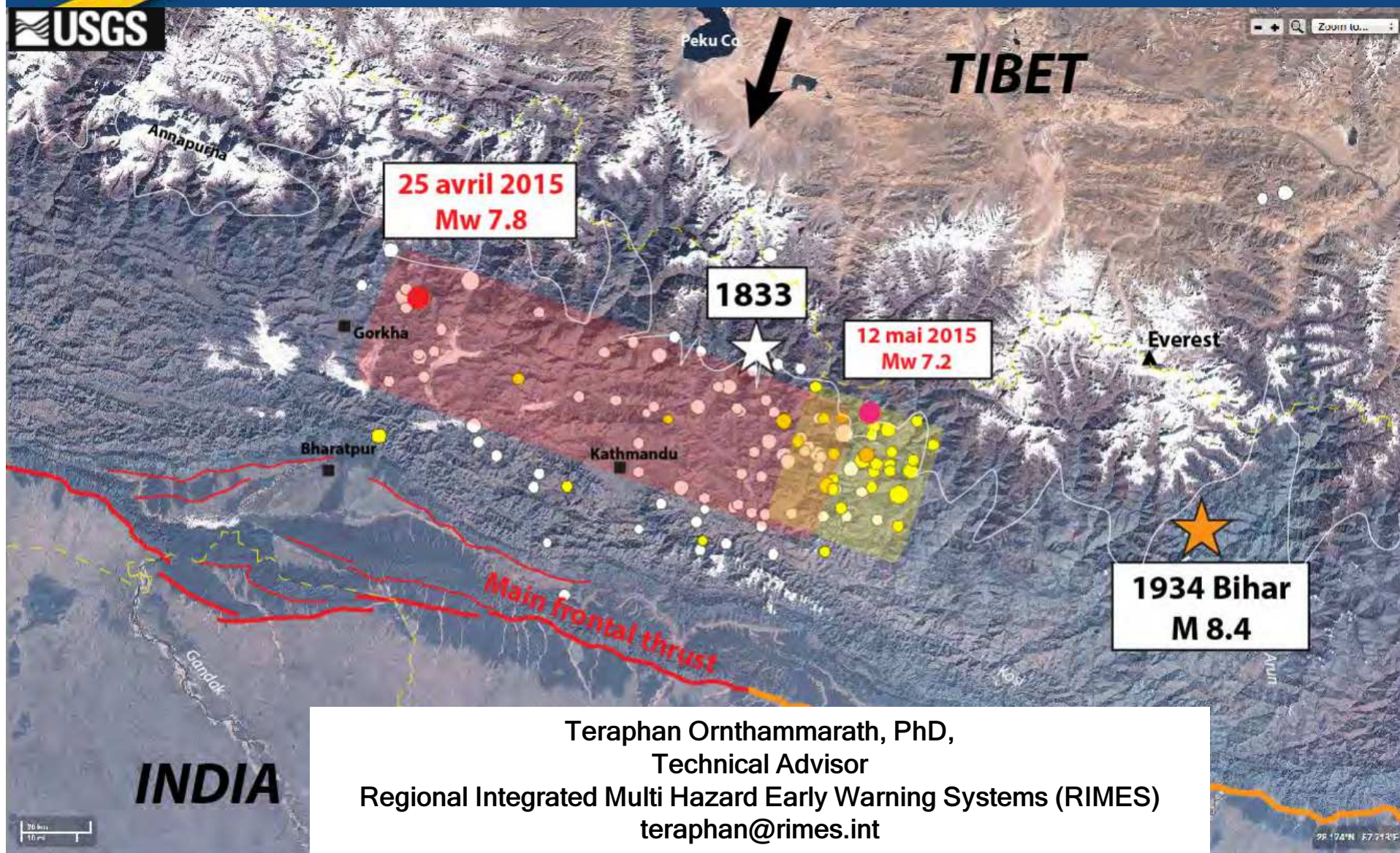




Capacity Development Lesson Learn from Mw 7.8 earthquake



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Presentation Content:

- Introduction about ShakeCast@RIMES
- Sustainability
- Observed Seismic Risk
- Microzonation?
- Building Code



ShakeCast@RIMES

**BETA**

ShakeCast@RIMES

Regional Integrated Multi-Hazard Early Warning System for Africa and Asia

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ข้อมูลแผนที่ ข้อมูลเทคโนโลยีการป้องกัน

ShakeCast Summary

Number of facilities evaluated: 60
Peak Ground Acceleration (%g) : **0.31 - 3.23**
Peak Ground Velocity (cm/sec) : **0.11 - 0.88**
Instrumental Intensity : **II - III**
Peak Spectral Acc. at 0.3 sec (%g) : **0.56 - 5.07**
Peak Spectral Acc. at 1.0 sec (%g) : **0.11 - 0.92**
Peak Spectral Acc. at 3.0 sec (%g) : **0.02 - 0.12**
Estimated Vs30 in m/s : **186.965 - 900**

M 5.5 - HINDU KUSH REGION, AFGHANISTAN

Origin Time: 2015-06-29 22:07:48
Location: 71.2837, 36.6932

Disclaimer : ShakeCast@RIMES is at experimental stage and is being improved to enhance potential damage assessment. Uncertainty needs to be considered in using the potential damage estimates, due to instrumentation used in earthquake detection and the characteristics (fragility) of local buildings.

[Go to Administration Panel](#)

An automated post-earthquake response system firstly developed by USGS

Operated @ RIMES since 2012

Evaluated more than 1,000 events

Largest evaluated event in RIMES Member states was magnitude 7.8 in Nepal



ShakeCast & Critical Infrastructure

Bridge Assessment Summary

Maximum Peak 1.0 sec Spectral Acceleration: 105.3903%

Maximum Acceleration: (not measured)

Total number of bridges assessed: 2030

Summary by inspection priority:

High	22	High Priority for full engineering assessment
Medium-High	107	Medium-High Priority for full engineering assessment
Medium	106	Medium Priority for full engineering assessment
Low	1795	Low Priority for full engineering assessment; quick visual inspection likely sufficient.

ShakeCast at Caltrans

Bridge Assessment Details

Bridges presented in the table below are sorted in order of severity of impact to bridges.

Bridge Name	Bridge Number	Dist-Cty-Rte-PM	Inspection Priority	1sec Peak Spectral Acceleration (%)	Exceedance Ratio
Ralston Avenue OC	35 0114	04-SM-101-9.55-BMT	High	105.3903	2.934
Via Del Oro OH	37 0477L	04-SCL-085-1.22-SJS	High	49.2711	2.472
San Mateo-Hayward Bridge	35 0054	04-SM-092-R14.44-FSTC	High	49.6514	2.167
Constitution Way OC	33 0513K	04-ALA-260-R.86-ALA	High	68.2755	1.415
Meridian Road Underpass	37 0258	04-SCL-280-R3.89-SJS	High	59.9229	1.122
Campbell Underpass	37 0135	04-SCL-017-12.22-CMB	High	70.2112	1.087
East Hillsdale Blvd OC	35 0138	04-SM-101-11.15-SM	High	68.3762	1.071
Redwood Creek	35 0145	04-SM-101-6.2-RDWC	High	61.0924	1.064
Sfobb-Approach Lower Deck	34 0118R	04-SF-080-4.95-SF	High	33.2578	1.057
Holly Street OC	35 0037	04-SM-101-8.4	High	65.904	1.048
Route 13/80 Separation (North)	33 0191G	04-ALA-013-13.92-BER	High	66.6766	1.046
Race Street Overcrossing	37 0260	04-SCL-280-R3.76-SJS	High	59.9229	1.045
Presidio Viaduct	34 0019	04-SF-101-9.14-SF	High	68.3123	1.035
South Delaware Street UC	35 0158L	04-SM-092-R11.61-SM	High	35.1822	1.030
South Delaware Street UC	35 0158R	04-SM-092-R11.61-SM	High	35.1822	1.030
Powell Street UC	33 0020	04-ALA-080-3.79-EMV	High	66.6766	1.020
Redwood Harbor Overhead	35 0065	04-SM-101-5.5-RDWC	High	56.8606	1.018
Macarthur Avenue OC	37 0100	04-SCL-280-L5.18-SJS	High	54.4613	1.012
N101-S84 Connector OC	35 0081G	04-SM-101-5.39-RDWC	High	56.8606	1.009
N17-N85 Connector Separation	37 0515G	04-SCL-017-9.24-LGTS	High	86.2137	1.008
San Francisco Creek	35 0013	04-SM-101-01	High	55.3678	1.007
N&S87-S280 Connector Separation	37 0396H	04-SCL-087-5.1-SJS	High	50.5564	1.001
Blossom Hill Road OC	37 0345	04-SCL-082-R.35-SJS	Medium-High	49.4998	0.951
Harkins Slough Road OC	36 0089	05-SCR-001-R2.27-WAT	Medium-High	56.0768	0.938
Sunol Street Rr UC	37 0263L	04-SCL-280-R3.41-SJS	Medium-High	52.8878	0.909
Sunol Street Rr UC	37 0263R	04-SCL-280-R3.41-SJS	Medium-High	52.8878	0.909



ShakeCast Report



Magnitude 9.0 - NEAR THE EAST COAST OF HONSHU, JAPAN

Version 12

Origin Time: 2011-03-11 05:46:24 GMT

Created: 2011-05-06 15:52:17 GMT

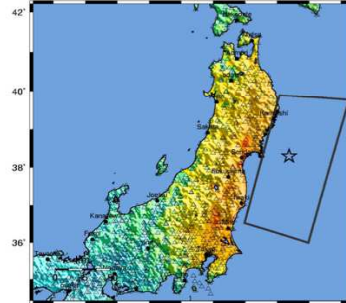
Latitude: 38.297 Longitude: 142.372

Depth: 30.0 km

These results are from an automated system and users should consider the preliminary nature of this information when making decisions relating to public safety. ShakeCast results are often updated as additional or more accurate earthquake information is reported or derived.

USGS ShakeMap: NEAR THE EAST COAST OF HONSHU, JAPAN

Feb Mar 11, 2011 05:46:24 GMT M 9.0 N38.30 E142.37 Depth: 30.0km ID:00007gpp



Map Version 12 Processed Fri Apr 22, 2011 00:42:15 PM MDT - NOT REVIEWED BY HUMAN

Intensity	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
Peak Acc. (%)	< 0.1	0.1-0.2	0.2-0.5	0.5-1.0	1.0-2.0	2.0-5.0	5.0-10	10-20	> 20
Peak Vel. (cm/sec)	< 0.1	0.1-0.2	0.2-0.5	0.5-1.0	1.0-2.0	2.0-5.0	5.0-10	10-20	> 20
Instrumental Intensity	I	II	III	IV	V	VI	VII	VIII	IX



ShakeCast Summary

Number of facilities evaluated: 12

Peak Observed Acceleration (g): 0.29 - 281.84

Superimposed Intensity: 1-10

Peak Observed Velocity (cm/sec): 0.29 - 281.84

Peak Spectral Acc. at 0.2 sec (g): 0.45 - 812.18

Peak Spectral Acc. at 1.0 sec (g): 0.48 - 162.47

Peak Spectral Acc. at 5.0 sec (g): 0.22 - 36.45

Peak Spectral Acc. at 10.0 sec (g): 0.20 - 3.08

Estimated 1.0/5.0 sec: 231 - 749

M 9.0 - NEAR THE EAST COAST OF HONSHU, JAPAN

Origin Time: 2011-03-11 05:46:24

Location: 38.297, 142.372

Depth: 30.0 km

Map Version 12

Map Version 12

Map Version 12

Map Version 12

Map Version 12

Map Version 12

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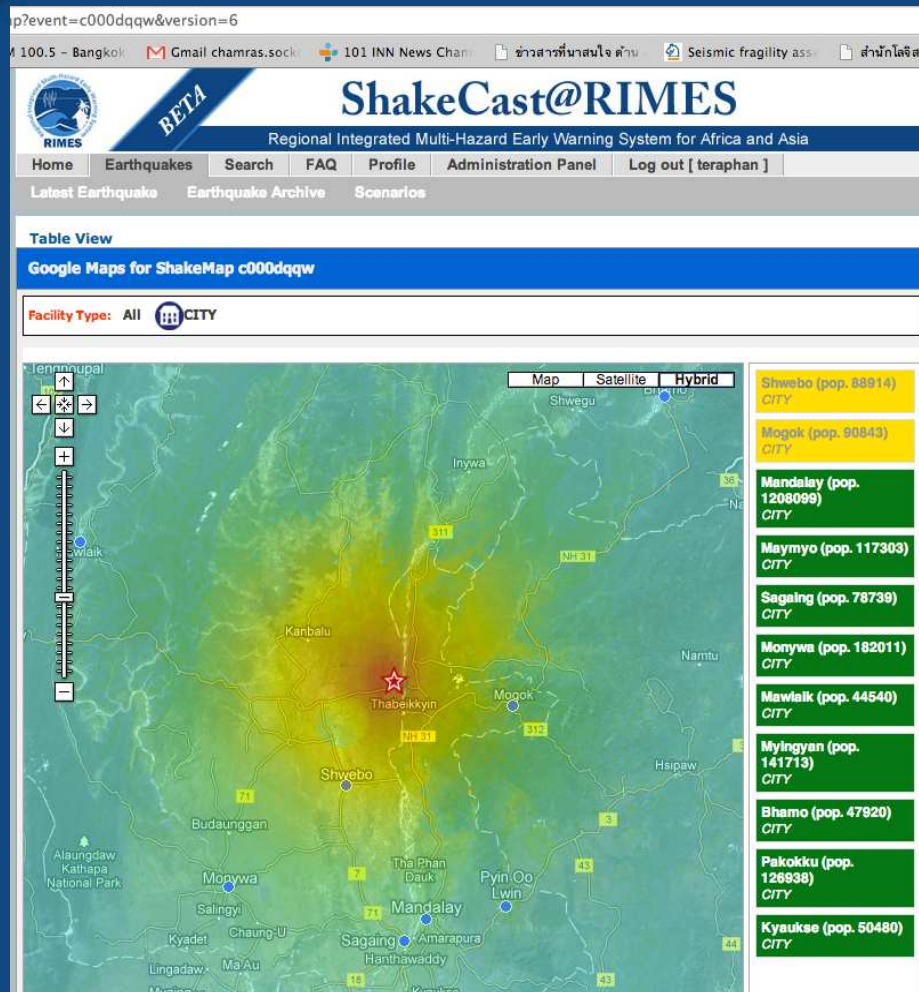
Map Version 12

Map Version 12

Map Version 12



11 November 2012, magnitude 6.8 Shwebo earthquake



What we know from ShakeCast@RIMES

Generated within 30 minutes

Preliminary solution indicating no severe damage to Mandalay

Other two cities near epicenters could be prioritized for rescue efforts

What we do not know from current ShakeCast@DMH Nay Pyi Taw

How many and how extensive of damaged buildings?

Local emergency commands are safe?

Any damaged infrastructures (road, gas pipeline, bridges, dams)?



11 November 2012, magnitude 6.8 Shwebo earthquake Estimated damage by ShakeCast with building data from MES

- ✓ More than 3,370 buildings from 3 cities (Bago, Sagaing, and Taungoo) based on survey data by MES.
- ✓ These buildings are classified according to structural and occupancy types.
- ✓ There are different structural types in these three cities such as Bamboo, Wooden, and Reinforced Concrete (RC) buildings.
- ✓ There are different occupancy types in these three cities such as Resident, Commercial, Education, Government buildings.
- ✓ The damage state information of these buildings could be useful for relevant stakeholders after damaging earthquakes.



Sustainability by working with local partners

Different structural types

Timber-Framed Masonry building



Timber building



Reinforced Concrete (RC) building



Unreinforced Masonry (URM) building



Sustainability by working with local partners

Different occupancy types

Commercial building



Government building



Temple

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_3908

