

# LAURIE JOHNSON CONSULTING

Urban Planning • Risk Management • Disaster Recovery

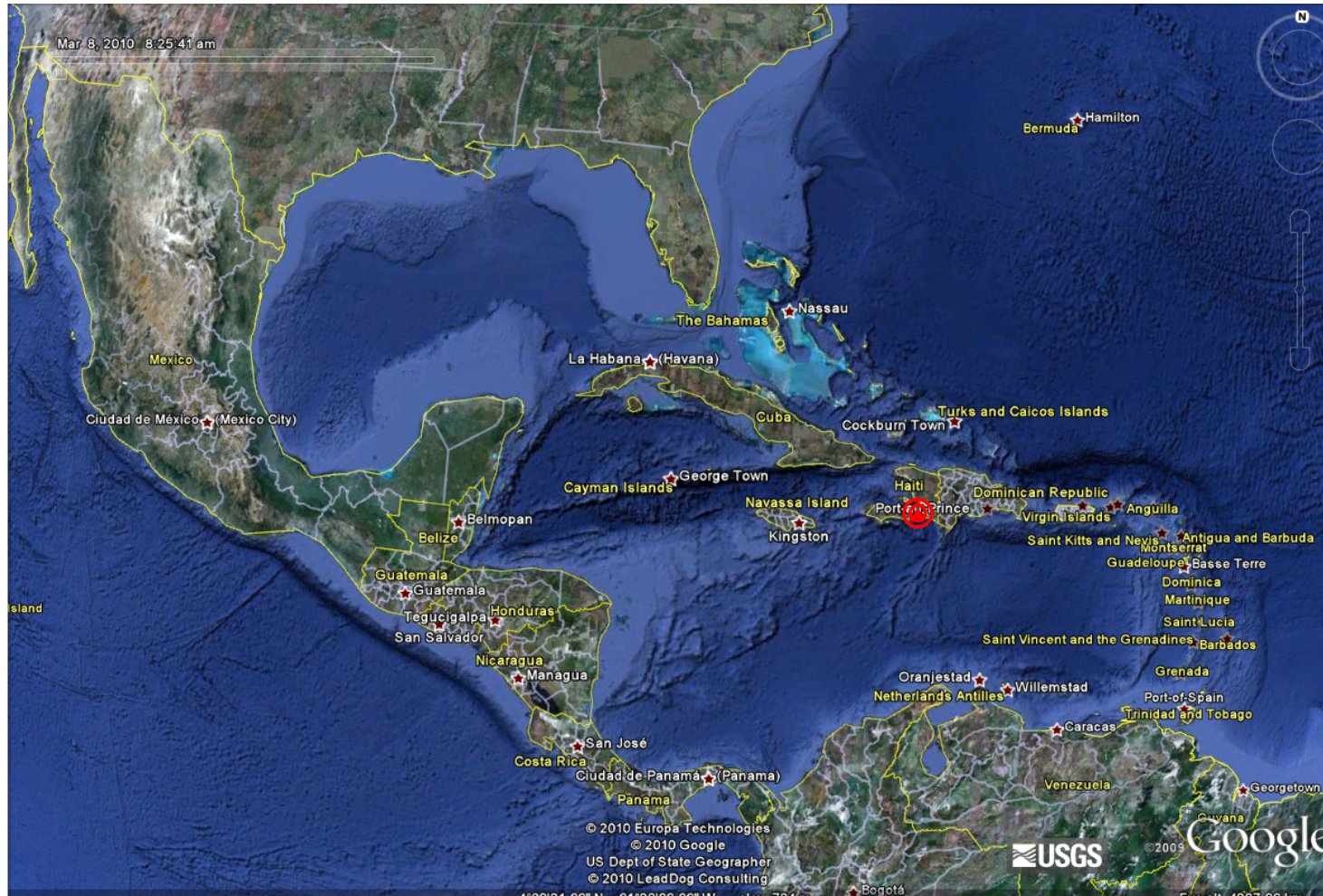


## Rebuilding in Haiti

SPUR Evening Symposium

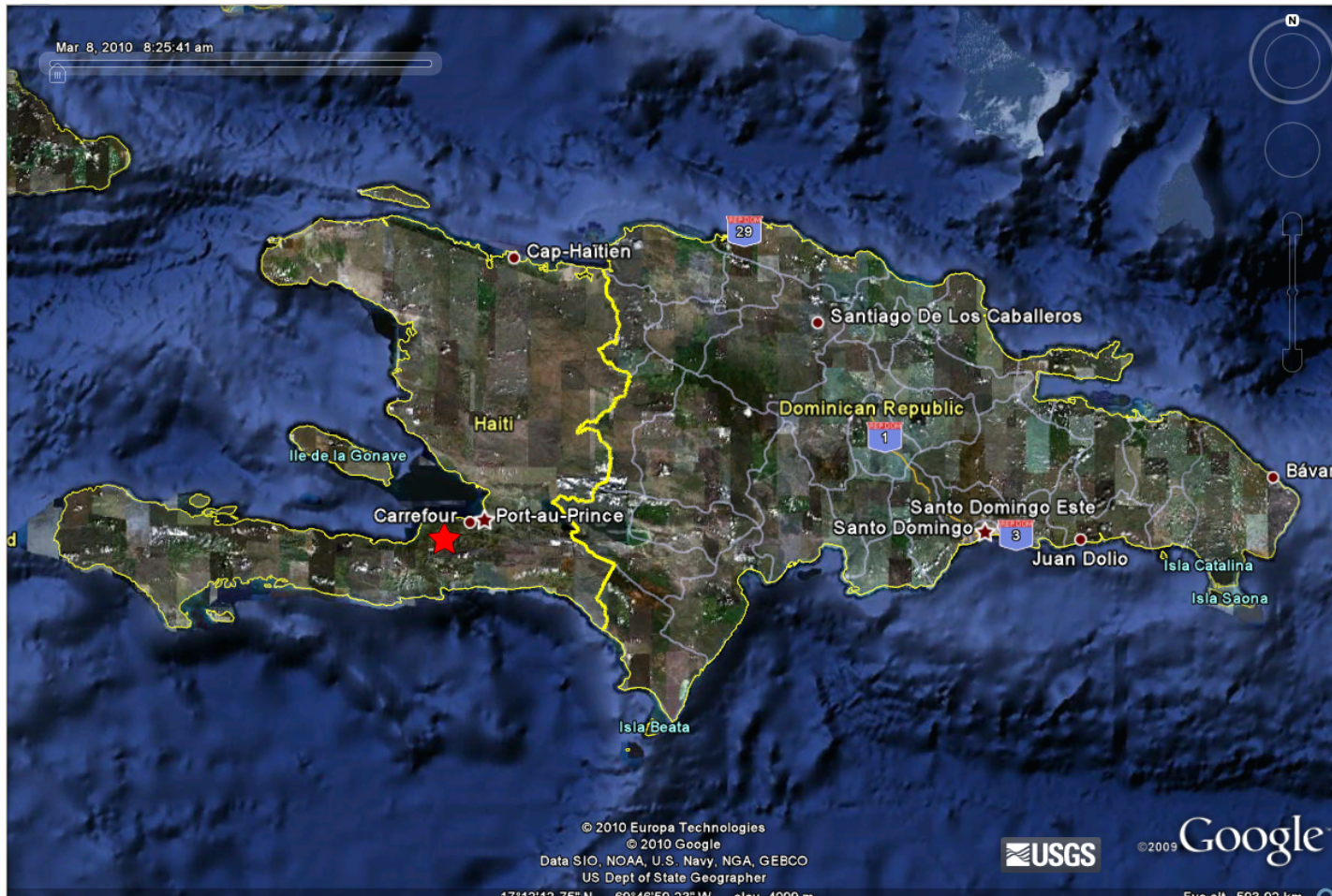
April 6, 2010

# M7 Earthquake, Tuesday, January 12, 2010

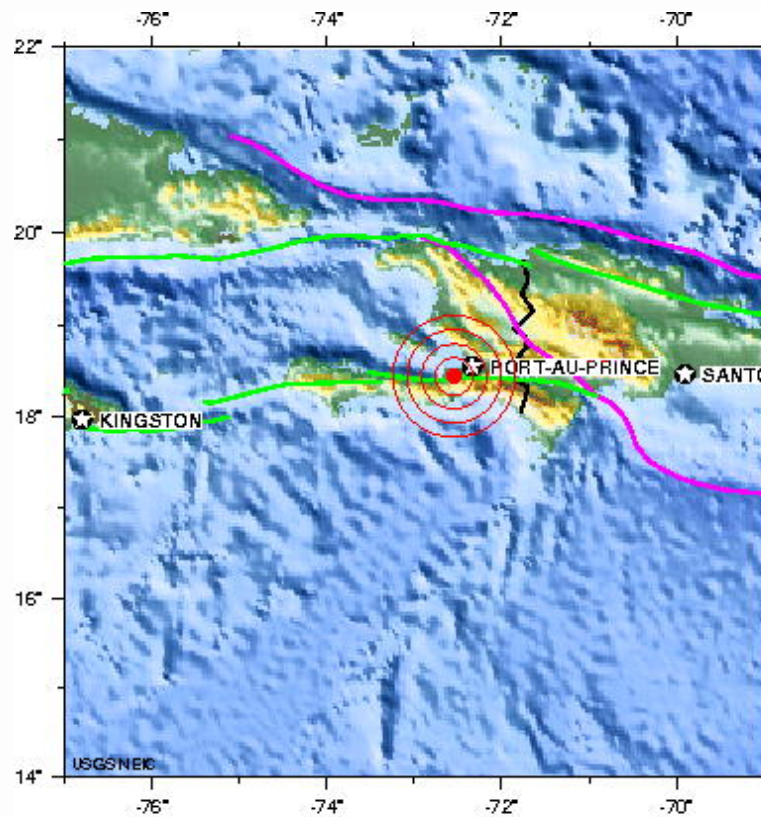




Struck at 4:53 pm, 25 km (15 mi) east of Haiti's capital; depth of 13 km (8 mi)



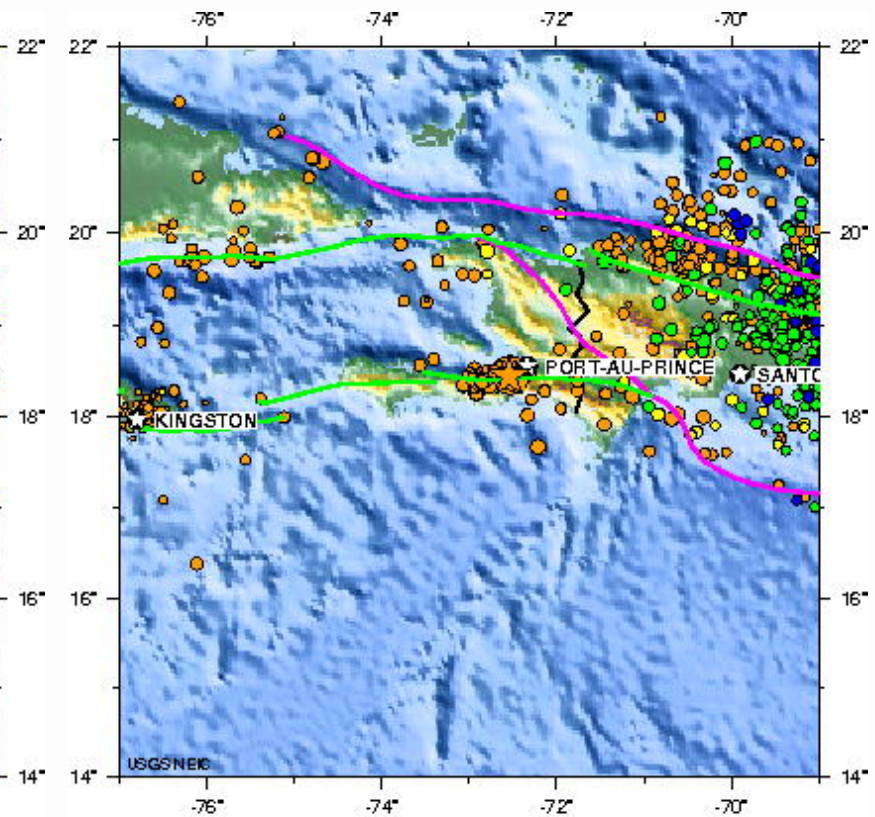
# Transform Plate Boundary, similar to the San Andreas System (California)



## HAITI REGION

2010 01 12 21:53:10 UTC 18.44N 72.54W Depth: 13 km, Magnitude: 7.0

Earthquake Location



## HAITI REGION

2010 01 12 21:53:10 UTC 18.44N 72.54W Depth: 13 km, Magnitude: 7.0

Seismicity 1990 to Present

Source: USGS 2010

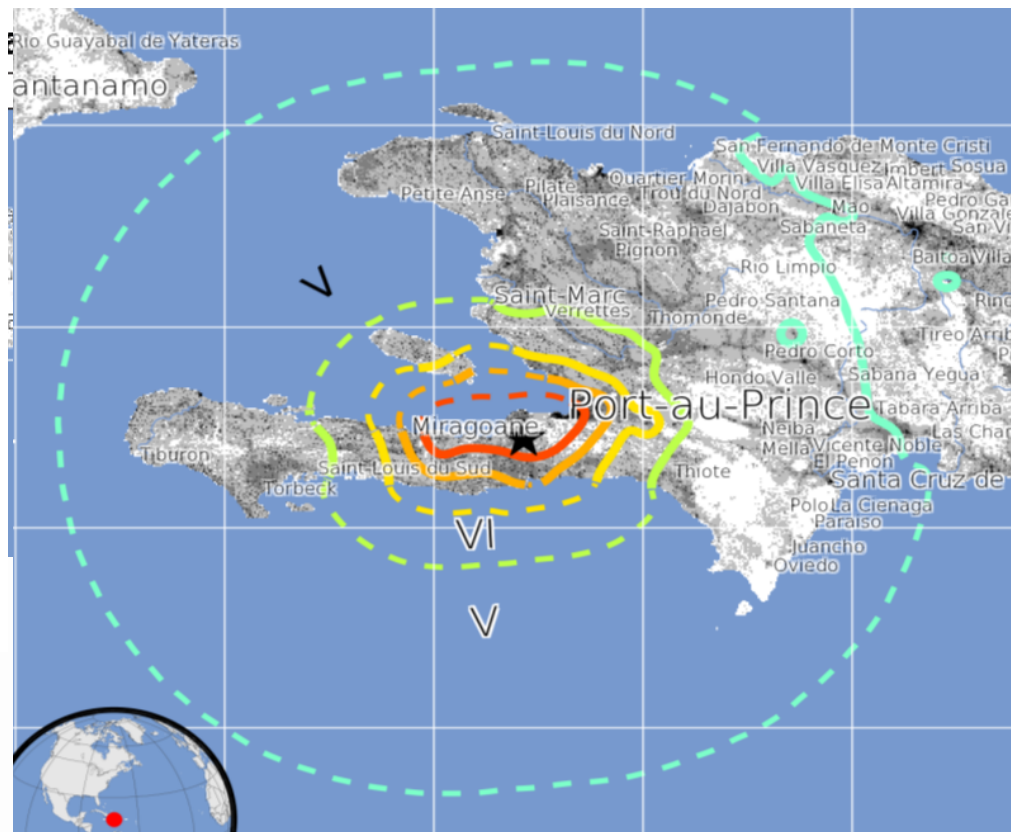
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# Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k = x1000)		--*	50k*	7,176k*	5,887k	903k	558k	626k	2,387k	2k
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	Moderate/Heavy	Heavy	V. Heavy
	Vulnerable Structures	none	none	none	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy	V. Heavy

\*Estimated exposure only includes population within the map area.



## Selected City Exposure

MMI	City	Population
IX	Gressier	26k
IX	Carrefour	442k
IX	Leogane	134k
<b>VIII</b>	<b>Port-au-Prince</b>	<b>1,235k</b>
VIII	Petionville	283k
VIII	Delmas 73	383k
<b>VIII</b>	<b>Miragoane</b>	<b>89k</b>
<b>V</b>	<b>Verrettes</b>	<b>49k</b>
IV	Santo Domingo	2,202k
III	Guantanamo	273k

bold cities appear on map

(k = x1000)

Source: USGS Earthquake Program, PAGER System, 2010  
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# Impacts

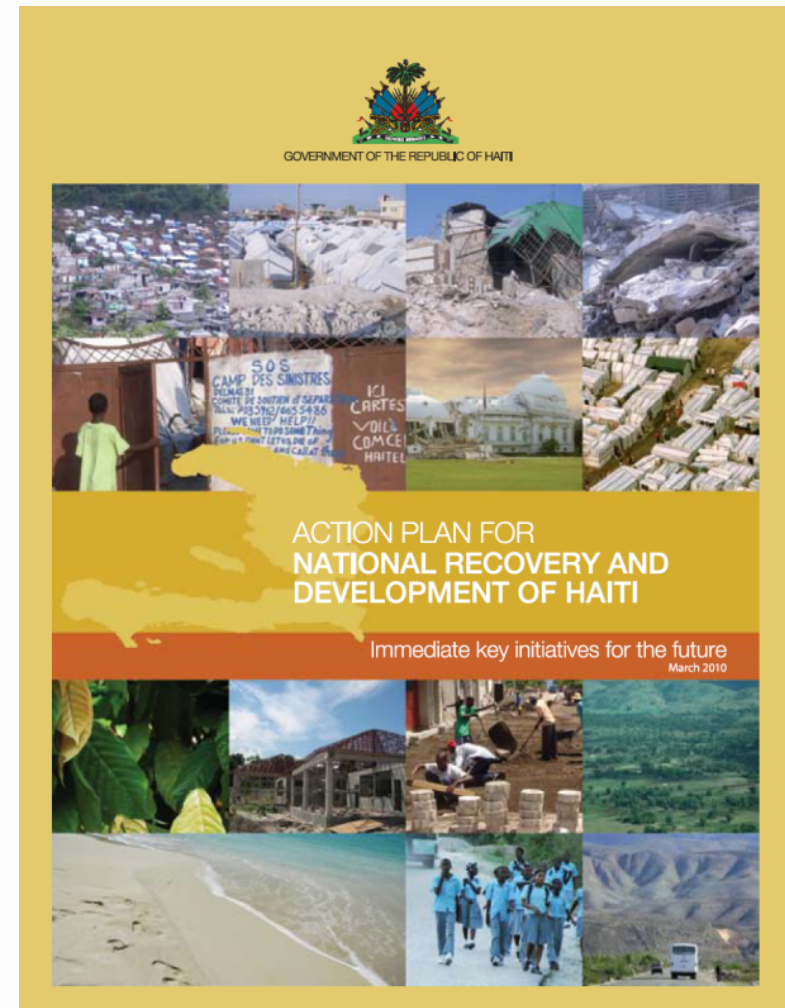
- ~230,000 deaths (Government of Haiti)
- 25-30% of Port-au-Prince's (PAP) buildings damaged or destroyed (UNOSAT)
- ~1 million people in tents/informal shelters
- Internal Migration and Immigration ~500,000 have left PAP (CCCM, OCHA)
- 465 camps or adjacent to existing housing (CCCM) At least 30-40% of unoccupied structures estimated to be safe; most are fearful to re-occupy (Oxfam)
- Majority of tent camps created spontaneously by individuals and later supported by NGOs

# Impacts

- Losses are ~50% of National GDP
- Despite widespread damage, formal and informal economy appears operational, albeit at reduced levels
- Government capacity greatly reduced: 13 of 15 government buildings; UN facilities damaged
- Undetermined number of Haitian gov't officials and 100+ UN employees killed; lost capacity and institutional knowledge
- ~50% of schools damaged(UNOSAT)

# Rebuilding Haiti

- Cost of rebuilding: \$11.5 billion (Government of Haiti, March 2010).
- UN Donor's conference pledges: \$9.95 billion (03/31/10)





# Challenges for Rebuilding

- Haiti's economy is likely to be stunted by the earthquake for many years. Rebuilding likely to take more than a decade.
- Rebuilding social, cultural, and institutional infrastructure, as well as physical and economic infrastructure.
- Opportunity to rebuild sustainably and to make significant advances in all these realms.
- Significant pressure to rebuild quickly.

# Panelists

- Kate Stohr, Co-founder and Managing Director of Architecture for Humanity
- Mary Comerio, Professor of Architecture, University of California, Berkeley