

PANAMA Earthquakes RISK PROFILE

What is a country disaster risk profile?

An estimation of the potential economic losses to assets caused by adverse natural events.

Country Disaster Risk Profile

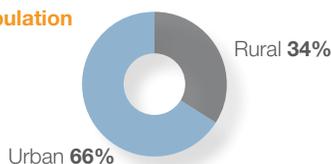
Applications

- ▷ **Develop** key baseline data
- ▷ **Evaluate** impact of disasters
- ▷ **Promote and inform** risk reduction
- ▷ **Inform** disaster risk financing

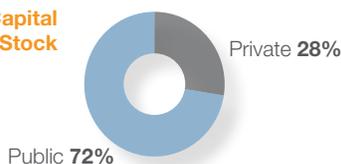
Country At-A-Glance

GDP US\$ **46.2 billion** | Population **3.9 million** | Total Building Exposure US\$ (Replacement Value) **45.8 billion**

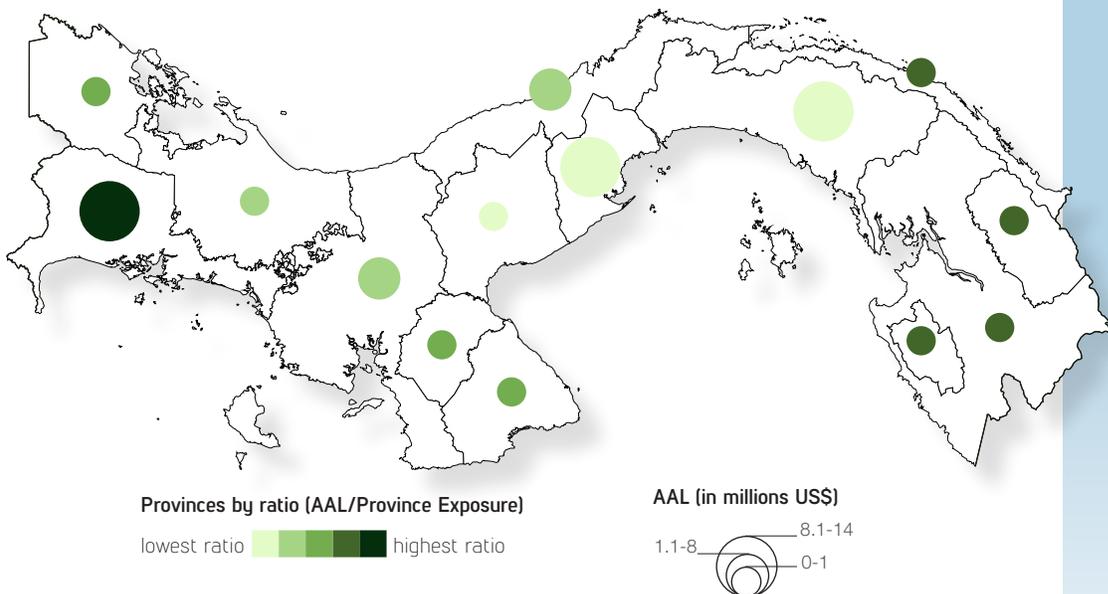
Population



Gross Capital Stock



Two representations of earthquake risk



Relative Risk: The darker the color, the higher the ratio of AAL/Province Exposure. The darkest color represents the province of Chiriqui which has a higher proportion of vulnerable structures due to construction types and/or potentially higher earthquake intensity.

Absolute Risk: The larger the circle, the higher the Annual Average Losses that the province could potentially incur over the long term.



Snapshot

▷ Annual Average Loss (AAL) is **US\$ 29.5M** or **0.6% of GDP**.

▷ The Probable Maximum Loss (250 year return period) is **US\$ 861.8M** or **1.9% of GDP**.

▷ At the 250 year return period, **earthquake** losses from multiple, extreme events within a given year could exceed **US\$ 1.8B**.

▷ Single-family, residential houses constructed with unreinforced fire brick masonry and unreinforced concrete block are the buildings most vulnerable to **earthquakes**, **accounting for 49% of AAL**.

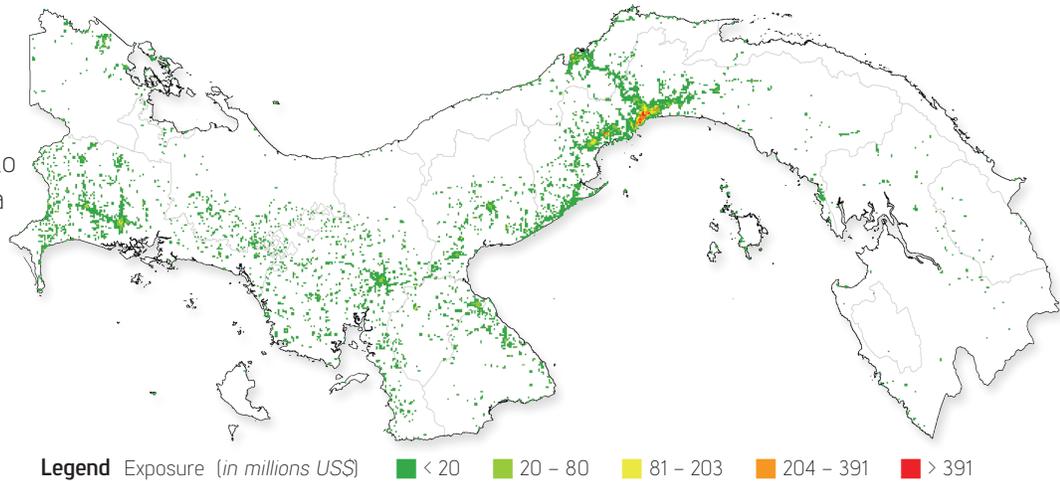
▷ Hurricane risk in Panama is **negligible** within a 250 year return period.

COUNTRYDISASTER RISK PROFILES

What is at risk in Panama?

Economic assets such as residential and non-residential buildings are at risk. These assets that are exposed to natural disasters are referred to as a country's **Building Exposure**.

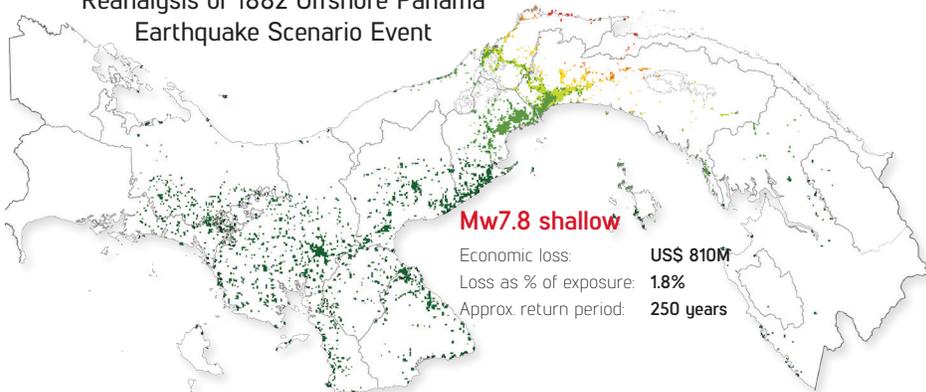
This map illustrates the value and distribution of residential and non-residential buildings in Panama at risk from earthquakes.



What are the potential losses in Panama?

In 1882, a magnitude Mw 7.8 earthquake struck the northern coast of Panama. If this event were to happen in 2015, it would cause losses of US\$ 810M amounting to 1.8% of GDP.

Reanalysis of 1882 Offshore Panama Earthquake Scenario Event



Estimated Losses due to EARTHQUAKES

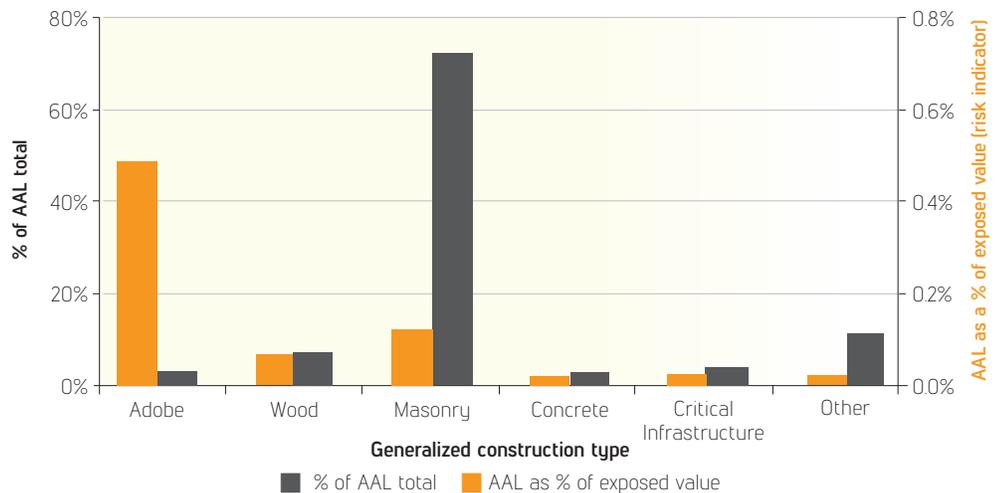


Legend (Mean Damage Ratio)

- 0.0 - 0.01
- 0.02 - 0.03
- 0.04 - 0.05
- 0.06 - 0.08
- 0.09 - 0.12
- 0.13 - 0.21

How can earthquake risk be reduced?

Masonry structures are the most prevalent building types in Panama, accounting for over 70% of AAL. Adobe structures, however, are the riskiest construction types.



To learn more, visit: collaboration.worldbank.org/groups/cdrp or email cdrp@worldbank.org

© 2016 International Bank for Reconstruction and Development / The World Bank
1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

This work is a product of the staff of The World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Rights and Permissions

The material in this work is subject to copyright. Because The World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for noncommercial purposes as long as full attribution to this work is given.

Any queries on rights and licenses, including subsidiary rights, should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2625; e-mail: pubrights@worldbank.org.