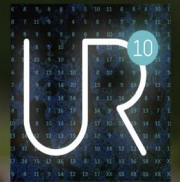


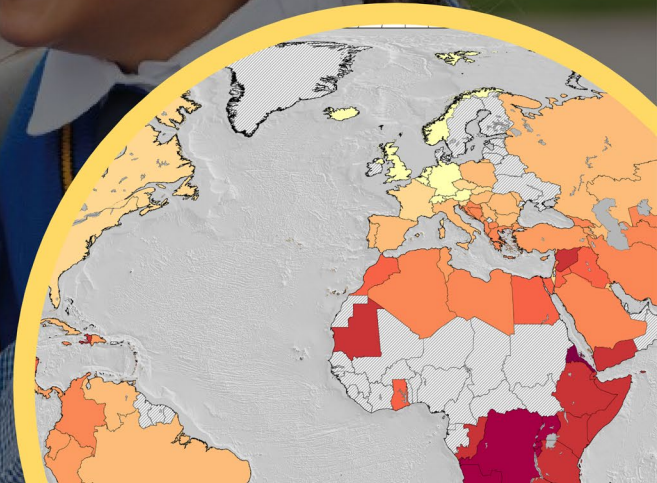
# Global Social Vulnerability and Resilience Model



Launch of the Global Model for

## Earthquake Social Vulnerability and Resilience

December 3, 2020  
1200h - 1400h CET



# GEM VISION AND MISSION



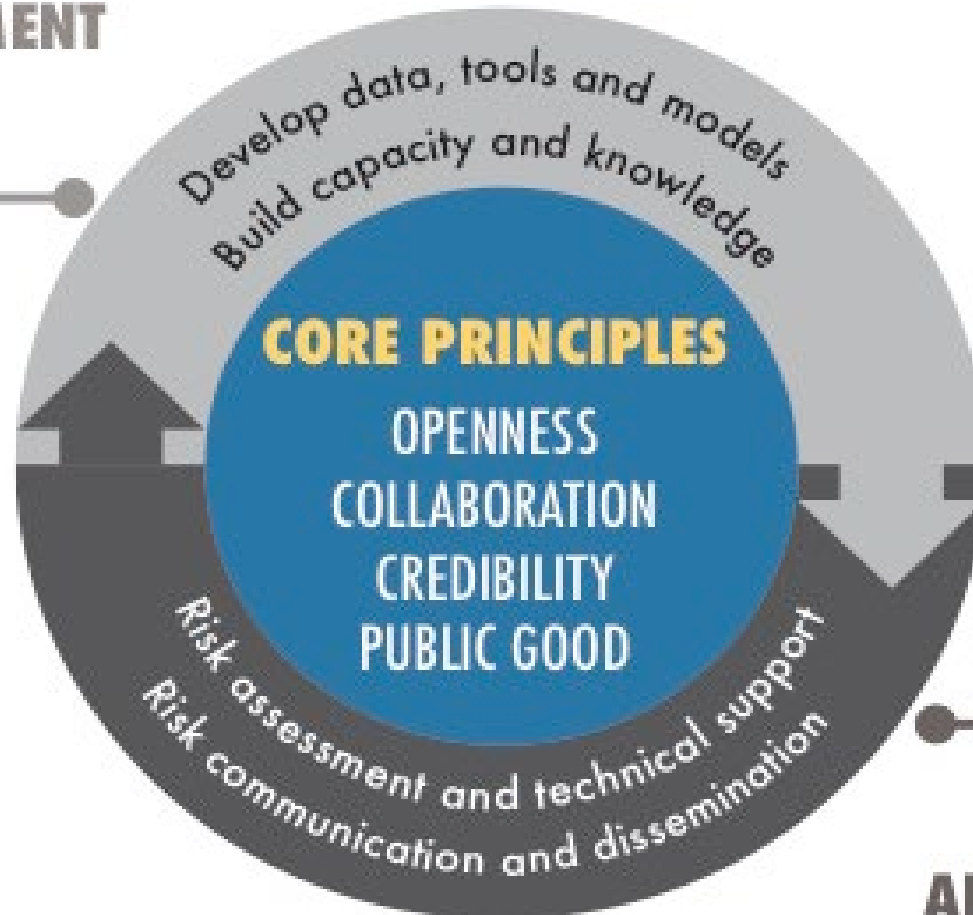
A world that is resilient to earthquakes.

# A PUBLIC – PRIVATE PARTNERSHIP



# FRAMEWORK

**DEVELOPMENT**



**APPLICATION**

# SCIENTIFIC FRAMEWORK

## INTEGRATED SEISMIC RISK



### PHYSICAL SEISMIC RISK

Probability of damage and loss to people and structures due to earthquakes

### SOCIO-ECONOMIC VULNERABILITY AND RESILIENCE

Vulnerability of society and economy and their capacity to cope with earthquake events



### SEISMIC HAZARD

Probability of ground shaking due to earthquakes

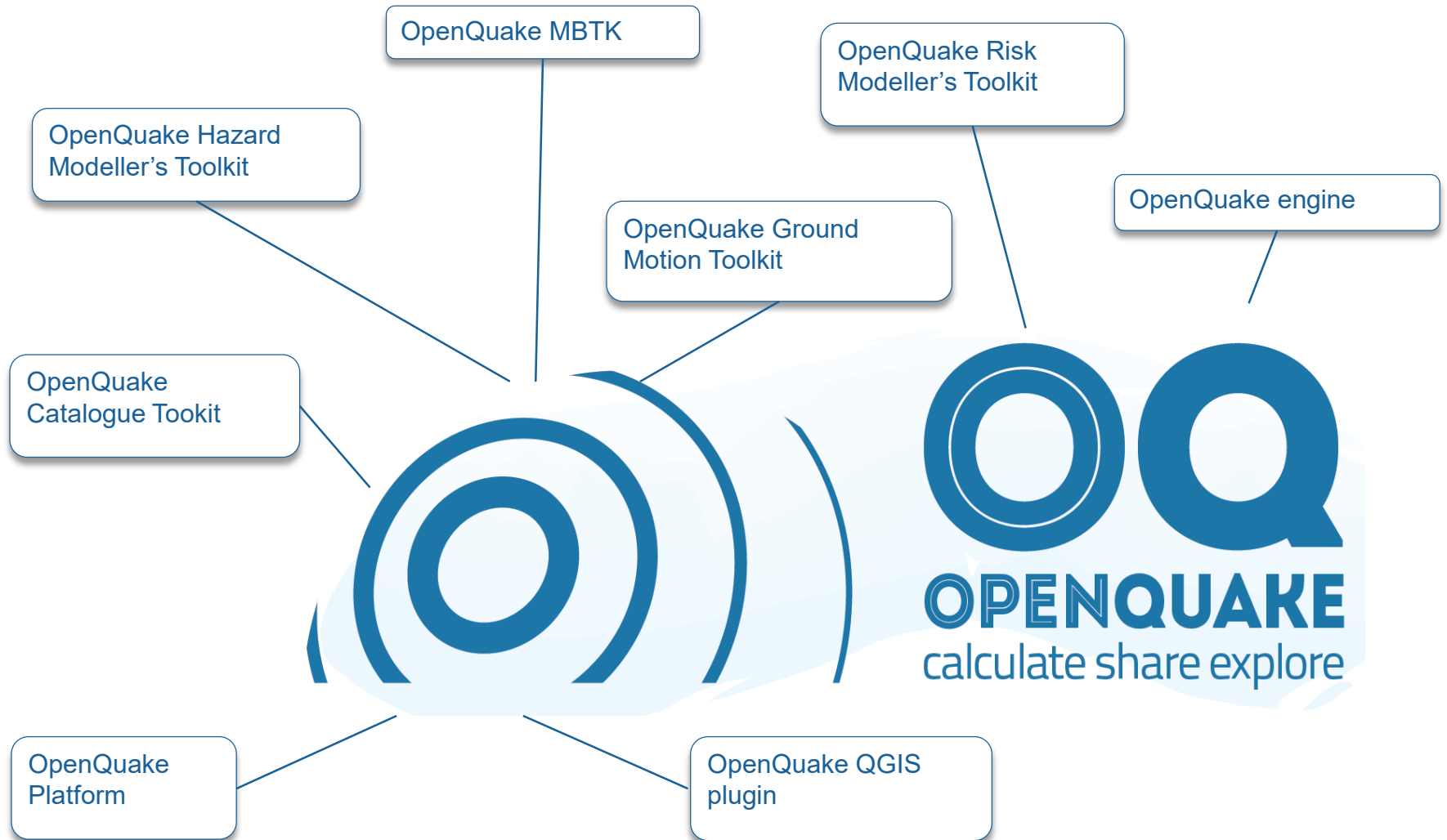
### EXPOSURE

Elements at risk

### PHYSICAL VULNERABILITY

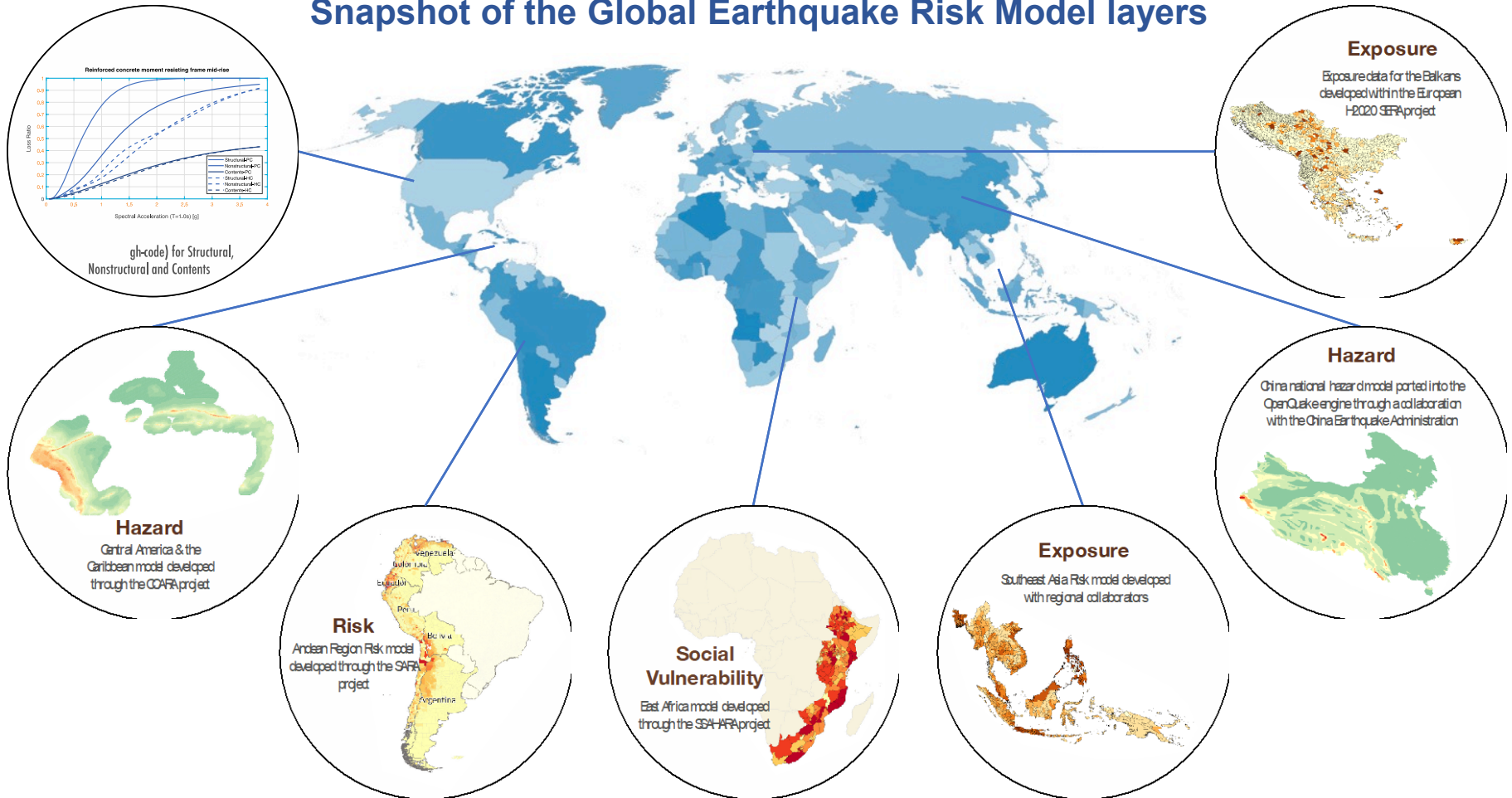
Vulnerability of structures and their occupants to seismic hazard

# Open Source Tools for Hazard and Risk Analysis

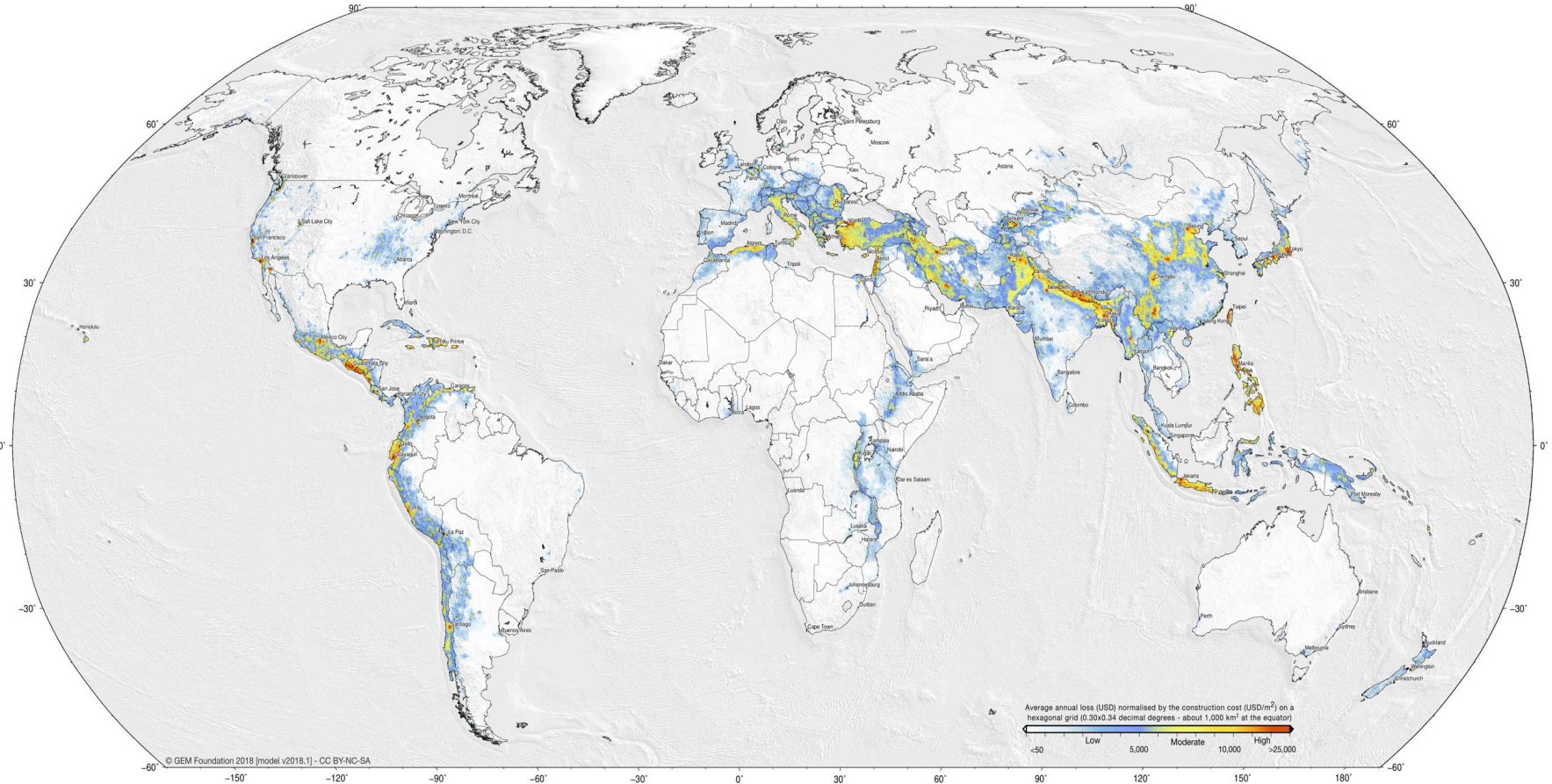


# GLOBAL EARTHQUAKE HAZARD AND RISK MODEL

## Snapshot of the Global Earthquake Risk Model layers



# Global average normalized annual loss (2018)

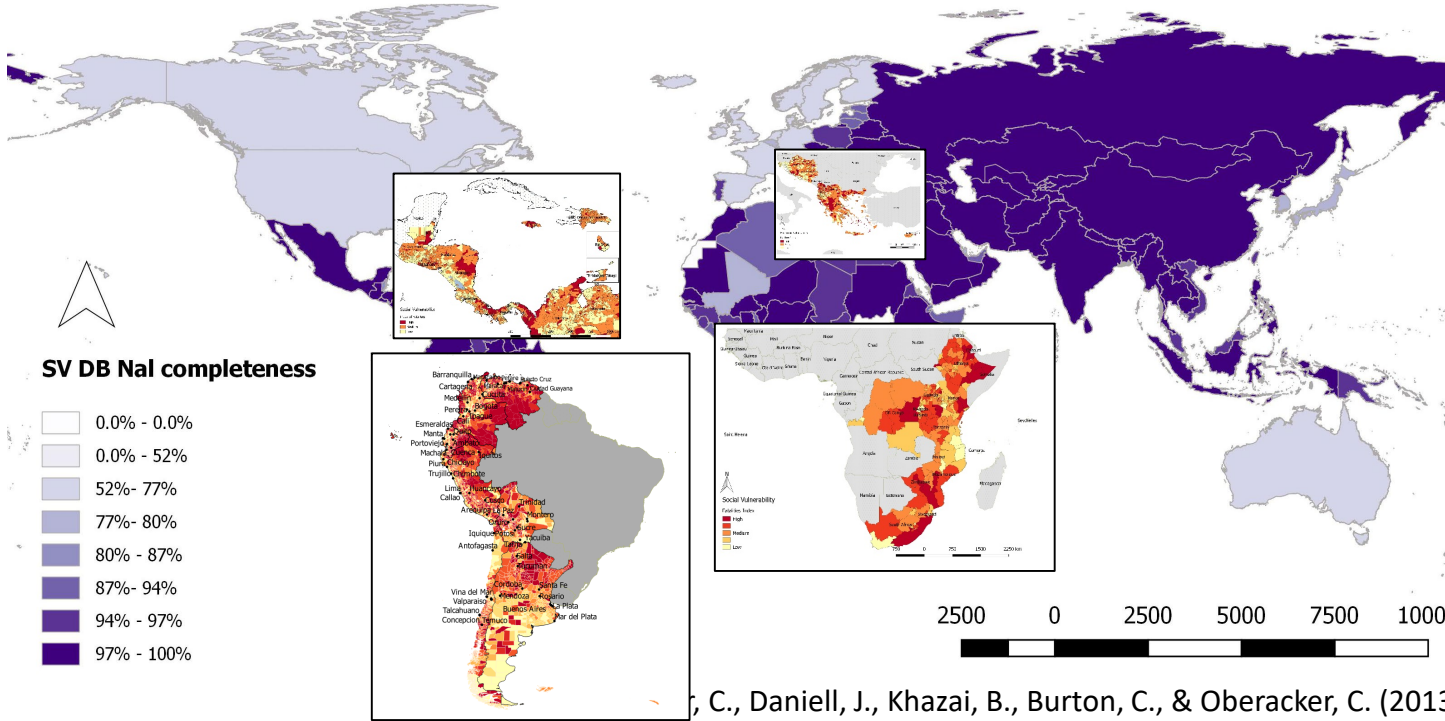


See [www.globalquakemodel.org](http://www.globalquakemodel.org)

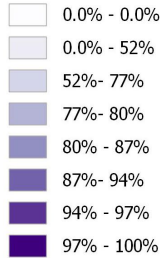





# GEM Social Vulnerability databases



## SV DB Nal completeness





KIT  
Karlsruhe Institute of Technology

2015


Socio-economic Vulnerability and Integrated Risk Project

Social and Economic Vulnerability Eastern Asia and Pacific Database Handbook




Christopher Power  
James Daniell  
Bijan Khazai  
Christopher Burton

CEEDIM Report No. 2



GEM  
GLOBAL EARTHQUAKE MODEL  
working together to assess risk



Willis  
Research

Power, C., Daniell, J., Khazai, B., Burton, C., & Oberacker, C. (2013). *National level Socio-Economic Vulnerability Database – Data Collection, Harmonisation and Analysis.*



National level Socio-Economic Vulnerability Database – Data Collection, Harmonisation and Analysis

Report produced in the context of the Social vulnerability and integrated risk initiative of GEM

Christopher Power, James Daniell, Bijan Khazai, Christopher Burton, Christopher Oberacker  
Karlsruhe Institute of Technology

Select socioeconomic indicators

Filters: All filters are optional. If no filter is set, the whole set of indicators will be retrieved.

Name: [Type the name of an indicator, or part of it]

Keywords: [Type one or more keywords (comma-separated)]

Theme: [Dropdown]

Subtheme: [Dropdown]

Select Indicators

Unselected	Selected
ECOAC039: Adjusted savings: consumption of fixed capital	ECOACCC0: Carbon Dioxide Emissions
ECOAC06X: Budget expenditures	ECOACCP: Consumer price index
ECOAC0K5: Exports	ECOACCF: Final consumption expenditure
ECOAC0OP: Foreign direct investment, net inflows	
ECOAC0CE: General government final consumption expenditure	
ECOAC0GC: Gross fixed capital formation	
ECOAC0GFC: Gross fixed capital formation	

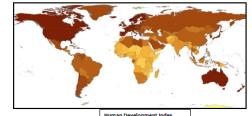
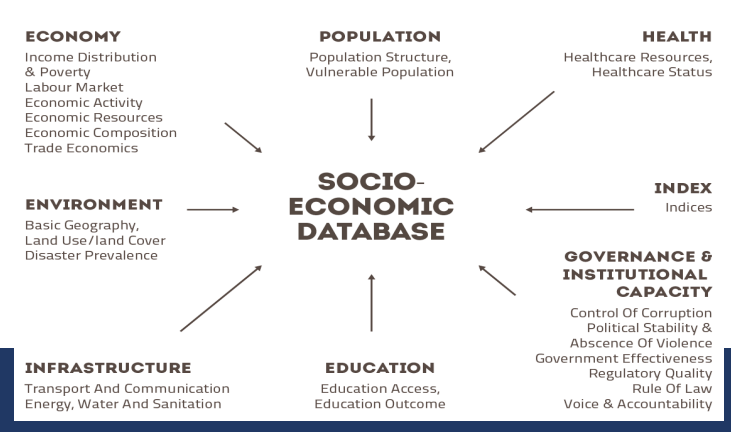
Indicator details

ECOACCF: Final consumption expenditure

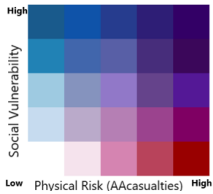
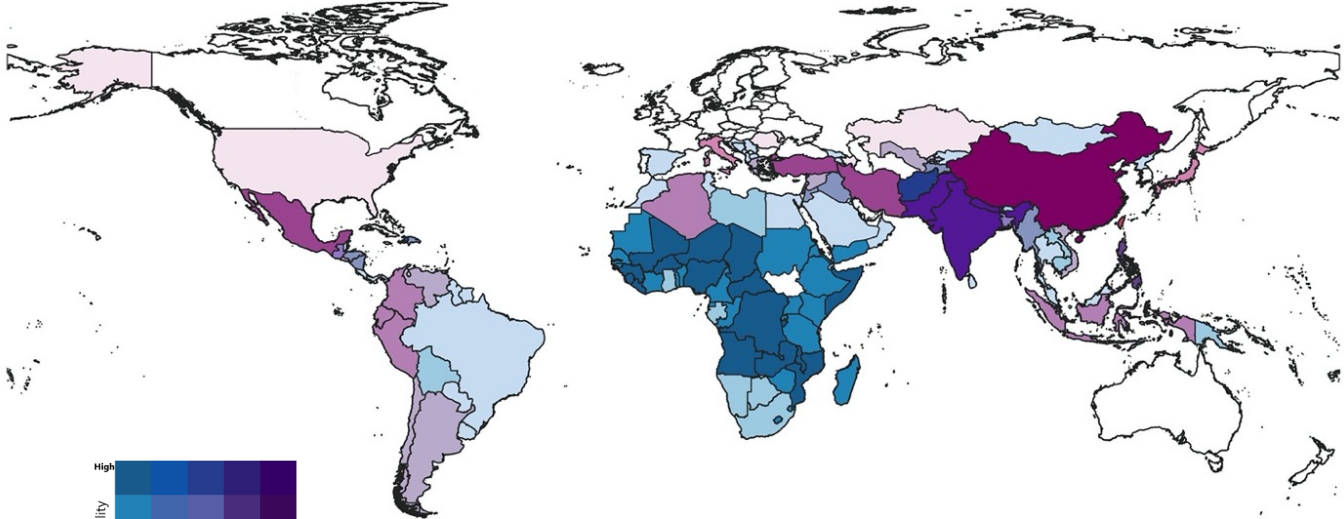
Description: Final consumption expenditure as percent of GDP - Shares of breakdown of GDP/Value Added at current prices in Percent

Source: Select Countries

Unselected	Selected
Guinea-Bissau (GNB)	Brazil (BRA)
Guinea (GUI)	Ecuador (ECU)
Haiti (HTI)	India (IND)
Honduras (HND)	Italy (ITA)
Hungary (HUN)	Kenya (KEN)
Iceland (ISL)	
Indonesia (IDN)	

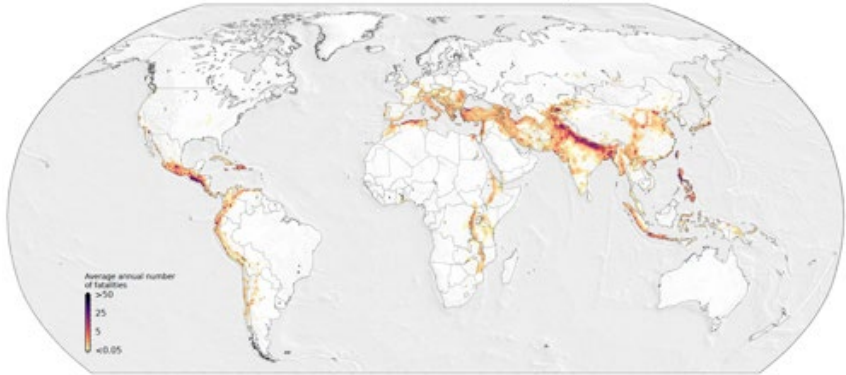
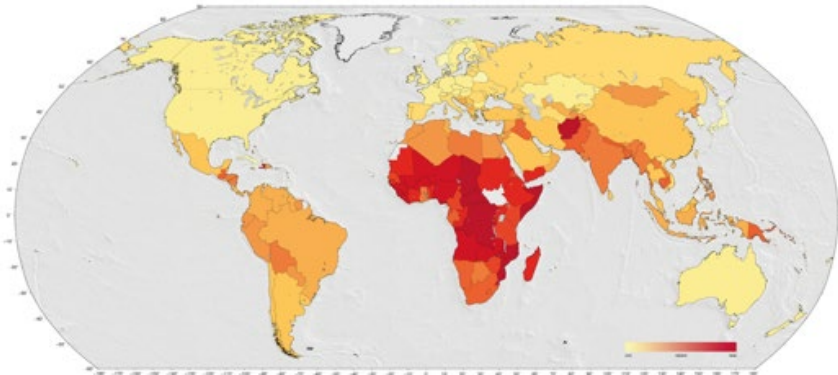


# Integrated Seismic Risk



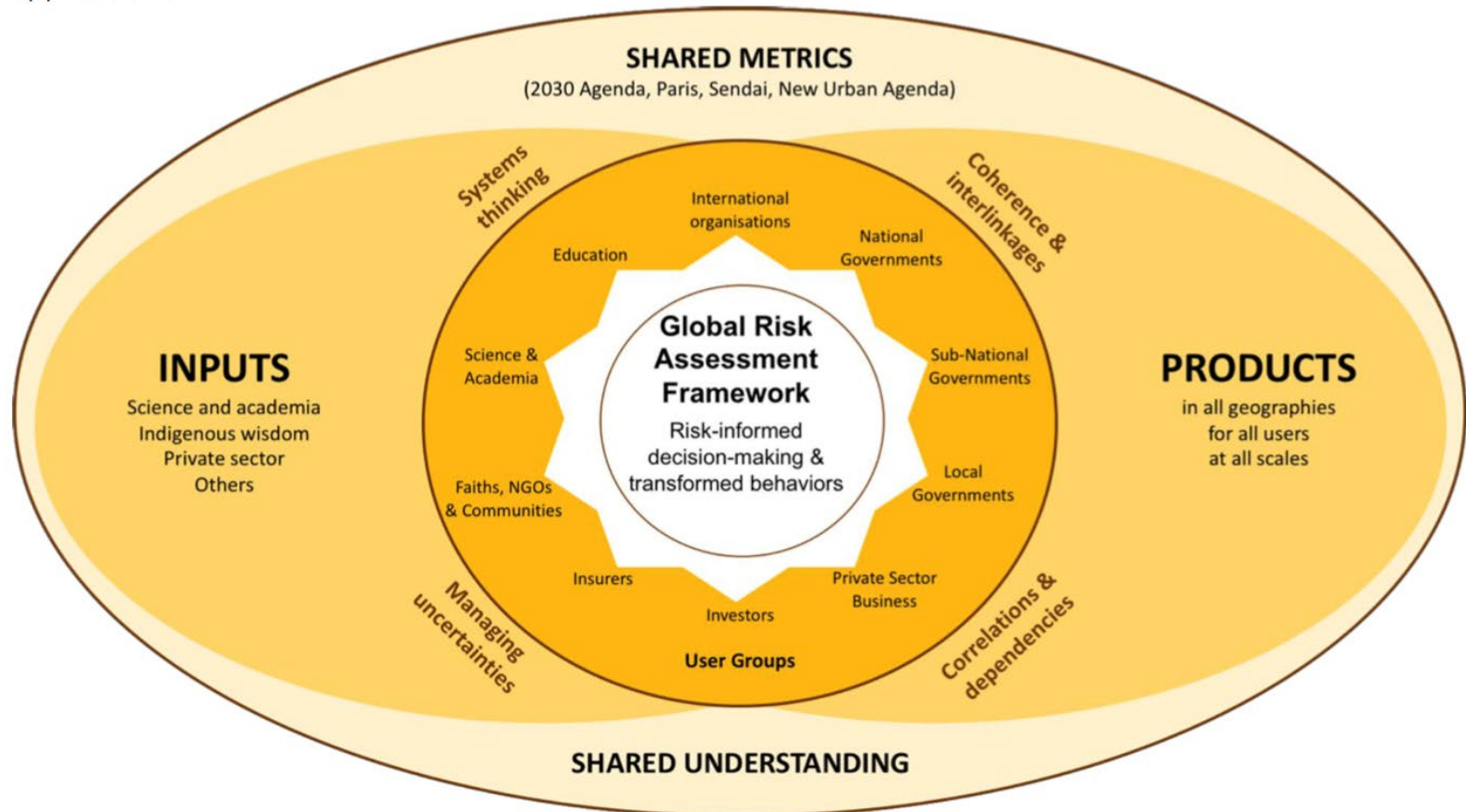
Global Social Vulnerability Map

Global Seismic Fatalities Map

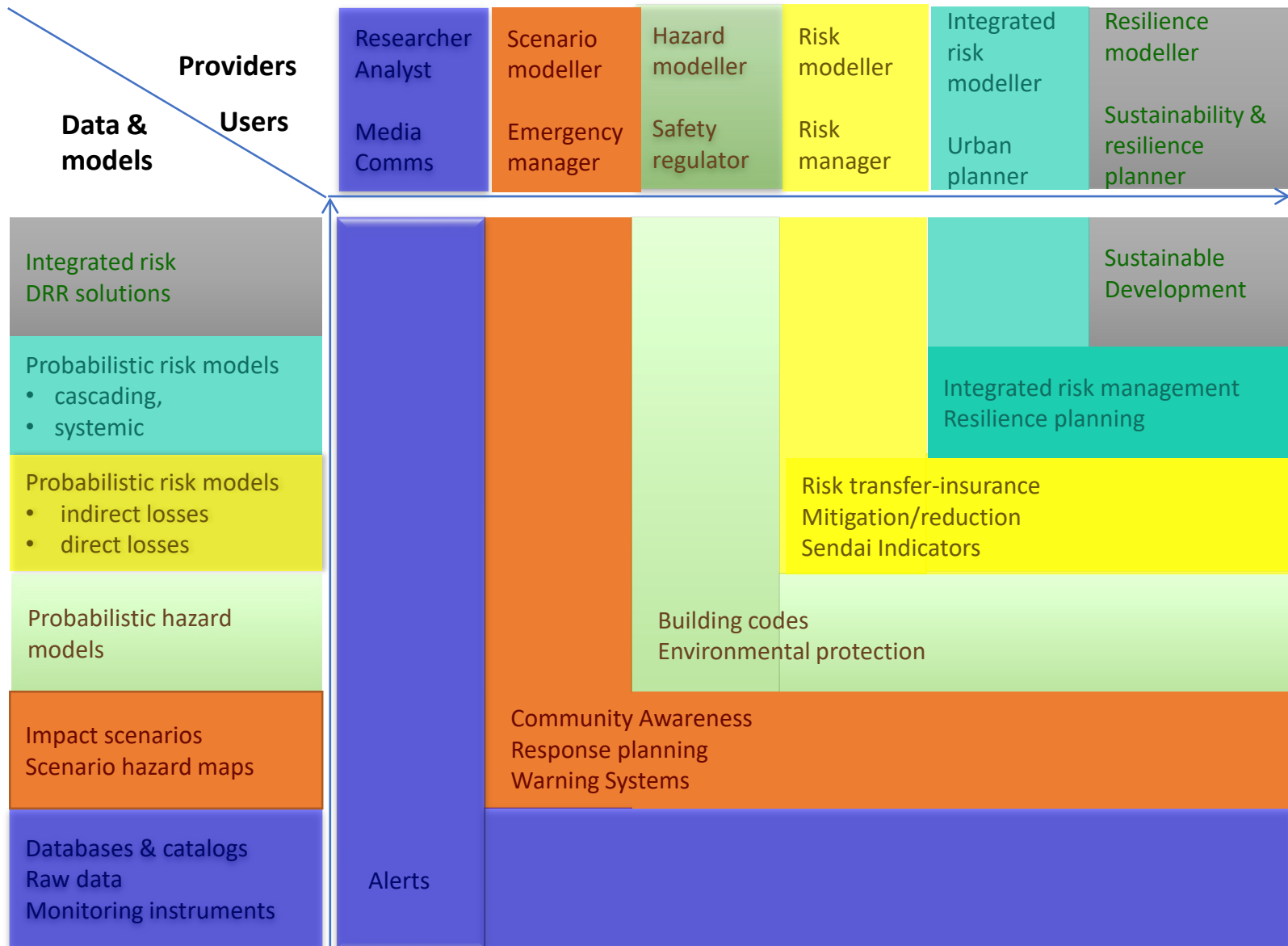


# Global Risk Assessment Framework (GRAF)

- Initiated with support of UN Secretary General through UNDRR
- Launched at Global Platform for DRR in May 2019 in Geneva



# Risk Modelling and DRR



# Thank You

[www.globalquakemodel.org](http://www.globalquakemodel.org)



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Please attribute to the GEM Foundation with a link to -  
[www.globalearthquake.org](http://www.globalearthquake.org)



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