QUANTIFY YOUR EARTHQUAKE RISK
Expert Solutions from the GEM Foundation

WHY CHOOSE US?
The Global Earthquake Model (GEM) Foundation, is a non-profit organisation, committed to open access to reliable and scientifically robust risk information for public benefit. Profits derived from commercial sales of products or services are used to fund GEM’s core programs, with an emphasis on providing support to developing countries. Core programs include advancing capabilities in earthquake and multi-hazard risk, pioneering scientific risk assessment methods, and expanding risk and resilience applications to downstream users.

FEES AND LICENSING
GEM offers customised pricing for its consulting services and product licensing, tailored to the unique needs of each client.

Contact product@globalquakemodel.org to schedule a demo of our flagship products and learn more about our flexible pricing schemes and subscription options.

Unlock the power of GEM’s products and services to enhance your risk assessment and mitigation strategies.

For more GEM products, please visit our Products page here: WWW.GLOBALQUAKEMODEL.ORG
**Global Seismic Hazard Map**
Gain access to available global datasets portraying peak ground acceleration with a 475-year return period on rock.

The GEM Foundation’s Global Seismic Hazard Map (version 2023.1) displays Peak Ground Acceleration (PGA) distribution, representing a 10% probability over 50 years. Utilising national and regional probabilistic seismic hazard models, this map is collaboratively developed and features enhanced spatial resolution compared to prior releases. Available in raster format under a CC BY-NC-SA 4.0 license, or a custom license for commercial applications, offering comprehensive seismic hazard insights for any use case.

**Global Seismic Risk Map**
Unlock insights with the Global Seismic Risk Map (v2023.1), providing updated global risk metrics and rankings for enhanced earthquake risk assessment.

The Global Seismic Risk Map presents several average annual metrics due to ground shaking in residential, commercial, and industrial sectors. Updated from 2018 releases, this map utilises publicly accessible datasets and models, offering insights into earthquake risk metrics and top-ranking countries. Available as shapefiles for research and communication purposes, it empowers stakeholders to understand the comparative risk between regions all over the world.

**OpenQuake Engine**
Utilise the OpenQuake Engine, an open-source software, for advanced seismic hazard and risk modeling, enabling precise risk assessments worldwide.

The OpenQuake Engine, a cornerstone product of GEM Foundation, facilitates seismic hazard and risk assessments globally. As an open-source software, it equips users with state-of-the-art tools for calculating earthquake risk scenarios and their impacts. With its robust capabilities, including event-based risk analysis and classical probabilistic seismic hazard assessment, the OpenQuake Engine remains a benchmark in seismic risk modelling since its inception in 2010. GEM offers bespoke OpenQuake Engine applications, enhancements and plugins.

**Atlas - Global Seismic Hazard Curves**
Access hazard curves worldwide instantly through Atlas, a dynamic web portal and API, providing a GIS-style map viewer for comprehensive risk assessment.

Atlas, a dynamic web portal and API, offers subscribers access to hazard curves derived from the Global Seismic Hazard Map. With its intuitive GIS-style map viewer, users can instantly view and download hazard curves for selected sites, facilitating detailed risk assessment. Designed as a subscription service, Atlas provides a flexible alternative for accessing hazard data layers, catering to diverse user needs and workflows.

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GEM’s Collaborative Work in Earthquake Risk Assessment: Project Highlights

Leveraging expertise from over 50 projects worldwide, GEM has a proven track record of collaborating with experts and institutions to advance earthquake risk assessment and mitigation through a collaborative approach. Our diverse portfolio includes regional risk models, innovative tools, and capacity building initiatives, all designed to strengthen resilience against seismic hazards. Below: Ongoing projects in light blue and completed projects in light green.

Multi-Hazard Expert Advice System for European Emergency Response Coordination Centre
This project combines services to rapidly assess natural hazards (earthquakes, tsunamis, floods, etc.) and their potential impact. GEM Foundation contributes by estimating earthquake impacts (collapsed buildings, displaced people) using global models. This enhances existing rapid loss assessment tools.

Forecasting and Communicating Earthquake Hazard and Risk (FORCE)
Supported by USAID’s BHA, FORCE aims to enhance earthquake hazard modelling in vulnerable countries and small island communities and improve risk models considering changes in occupants, structures, economic value, and climate change effects. It evaluates future earthquake risk losses, providing decision-makers with evolving risk metrics crucial for designing long-term risk reduction measures.

Developing a Disaster Risk Transfer Facility in the Central Asia Regional Economic Cooperation Region
The project focuses on disaster risk assessments and modelling across CAREC countries, designing a regional pilot disaster risk transfer facility, and conducting capacity building and awareness-raising activities for public and private stakeholders.

Earthquake Vulnerability and Systemic Risk Assessment in Bangladesh
This project aims to develop a detailed sub-national earthquake risk model for Bangladesh at the zila and upazila level, including probabilistic seismic hazard, building exposure, and seismic vulnerability models. Critical scenarios for key cities are identified through consultation with local stakeholders and experts.

GeoINQUIRE: Geosphere INfrastructures for QUestions into Integrated Research
GeoINQUIRE enhances access to geospheric data, products, and services, enabling detailed monitoring and modelling of geospheric processes. With 51 partners including national research institutes, universities, and geological surveys, GeoINQUIRE offers Virtual and Transnational Access installations, including the earthquake and secondary hazard impact data access service by the GEM Foundation.

ASCE Earthquake Loads Overseas (AELO)
A web service providing design ground motions (on rock and soil) compliant with ASCE standards (US) for 500 locations worldwide. This collaboration between GEM, USGS, and US government agencies supports international earthquake-resistant building design.

Training, Innovation, and Regional Assessments: GEM’s notable projects in the past
- Training and Communication for Earthquake Risk Assessment (TREQ)
- Methods and Tools Innovation for Seismic Risk Assessment (METIS)
- South America Risk Assessment (SARA)
- Caribbean and Central America Earthquake Risk Assessment (CCARA)
- Sub-Saharan Hazard and Risk Assessment (SSAHARA)
- Collaborative Risk Assessment for Volcanoes and Earthquakes (CRAVE)

For more GEM projects, please visit our Projects page here:
WWW.GLOBALQUAKEMODEL.ORG/PROJECTS
How to support our goal

GEM offers flexible mechanisms to enable potential partners to contribute to its ongoing and future work programs. Partners and collaborators can enter into sponsorships, project partnerships and service agreements, and can select the level of engagement based on their needs and requirements.

Core Programs

Advancing science, core capability, products, applications and services in earthquakes and secondary hazards; multi-hazard and systemic risk assessment; and integrated risk and resilience solutions.

GEM’s sponsorship structure and fees have been designed to incentivise participation of public and private organisations with various sponsor types and contributions: public governor, governor, advisor and small business advisor.

Projects
Sponsors and other partners may support and (co)fund a specific project that is effectively promoting and improving earthquake and natural hazard risk reduction and resilience globally.

Bespoke Products & Services
GEM develops bespoke services, products and other resources that can be used for public and commercial purposes by organizations or individuals worldwide.

Technical Cooperation & Research
GEM conducts research and technical cooperation on earthquake hazard and risk science. Contact us for more details on the topics we can work on together.

Supporters

GEM is comprised of collaborators from public, private, academic and non-government organisations worldwide. These partners work together to advance the state-of-the-art for disaster risk reduction by developing data, tools and information and conducting hazard and risk assessments for improving our understanding of earthquake hazard and natural hazard risk globally.

Public Governors

Private Governors

Associate Partners

Advisor Sponsors

Project Partners

Product Distribution Partners

Learn more, visit our website:
WWW.GLOBALQUAKEMODEL.ORG