

IDRiM 2016

Isfahan, IRAN

1-3 October 2016



Iranian Earthquake
Engineering Association (IEEA)

ThinkHazard! - Giving decision makers access to multi-hazard information for safer projects

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BRGM French Geological Survey





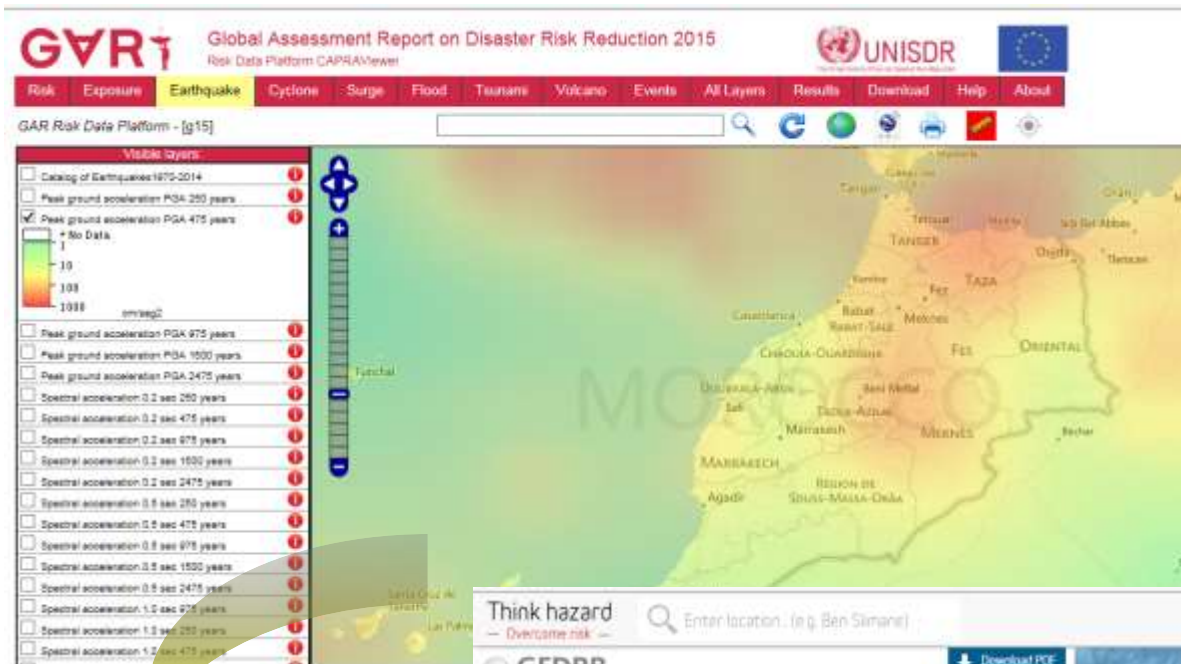
Think**Hazard!**

A new web tool developed by GFDRR
in partnership with BRGM, Deltares and Camptocamp

Why a new tool?

- > Prevention is better than cure.
- > The shame is not in asking; shame is in not knowing
- > Simple knowledge, accurate guidance

Why a new tool?



Data:

Acceleration (PGA)
Return period 475 years
Source UNISDR



Output:

High/ Medium/ Low hazard
What you can do



For who?

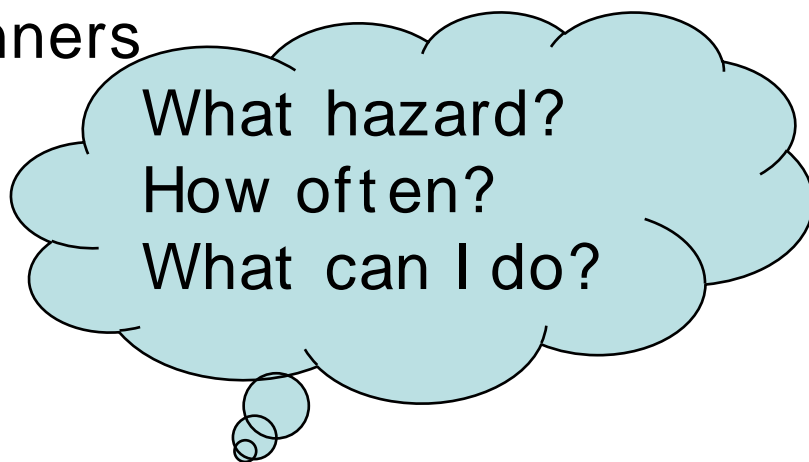


WB
projects
planners

Dev
Community

NGOs

Specific
needs



What is it?

Source: Photothèque BRGM



River flood



Earthquake



Water scarcity



Cyclone



Coastal flood



Tsunami



Volcano



Landslide



Drought



Earthquake



Tsunami



Flood



Storm surge

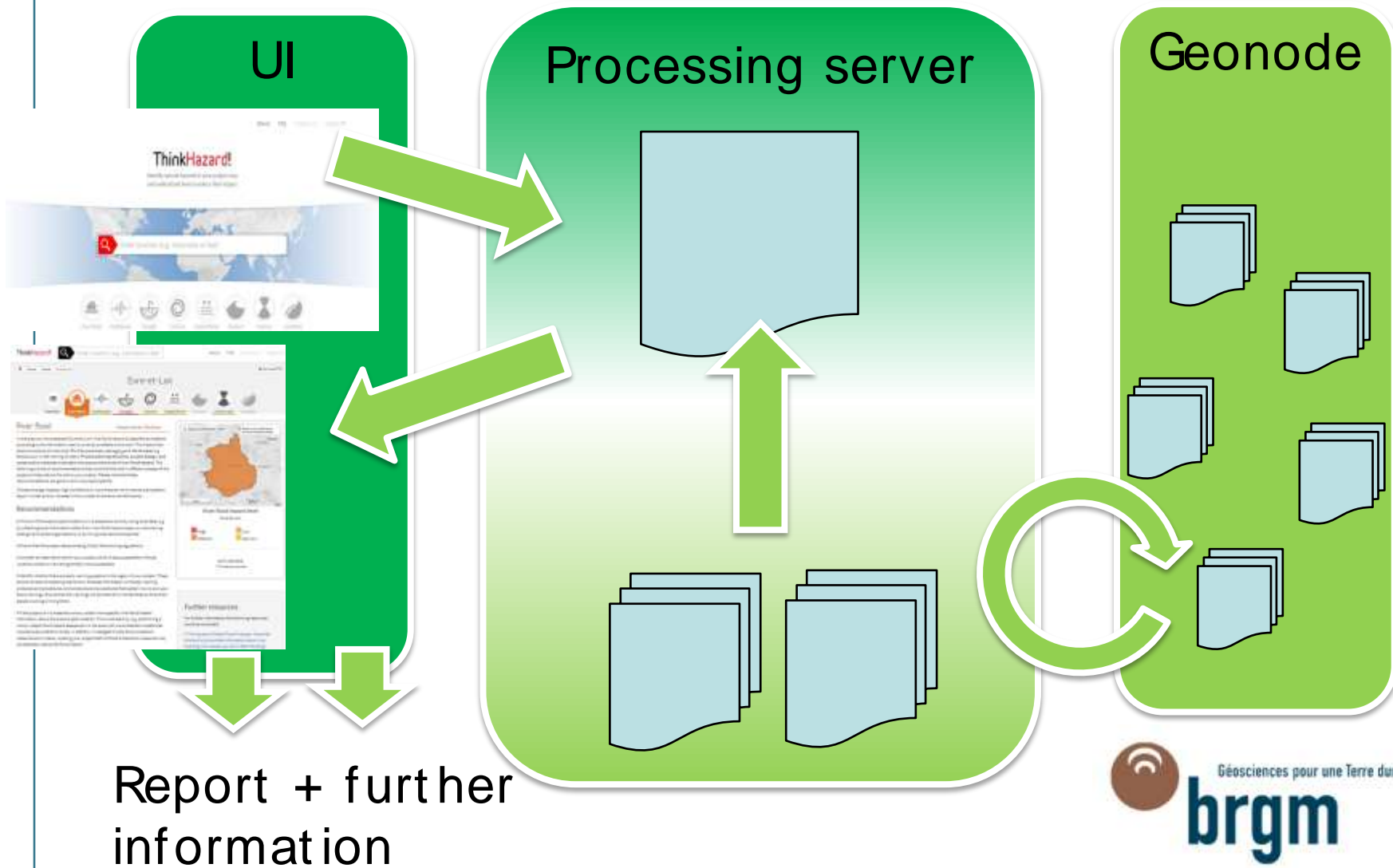


Cyclone

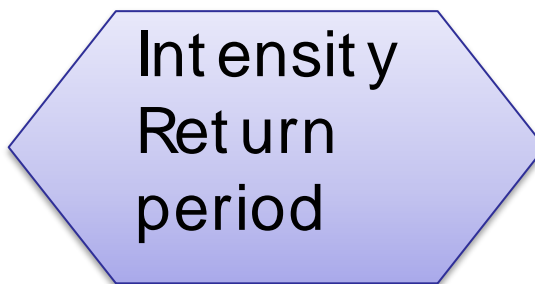
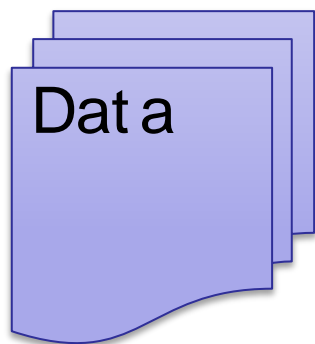


Volcanic ash

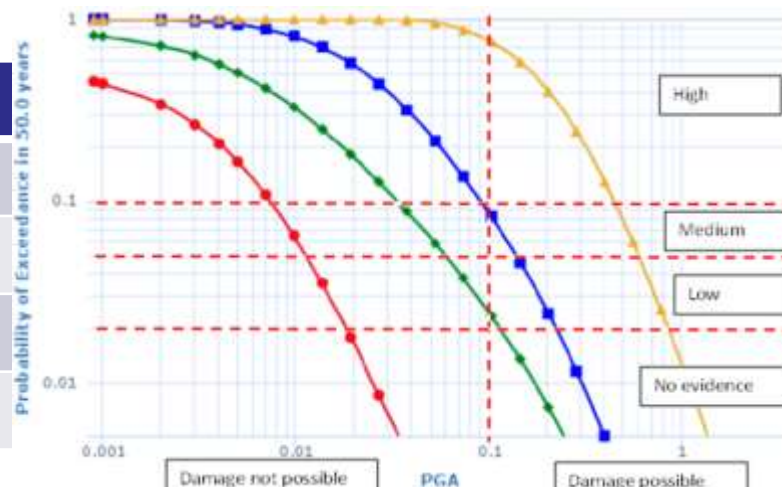
How does it work?



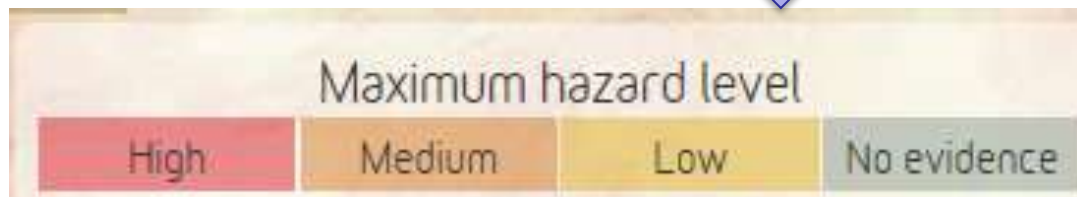
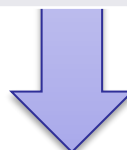
What is inside?



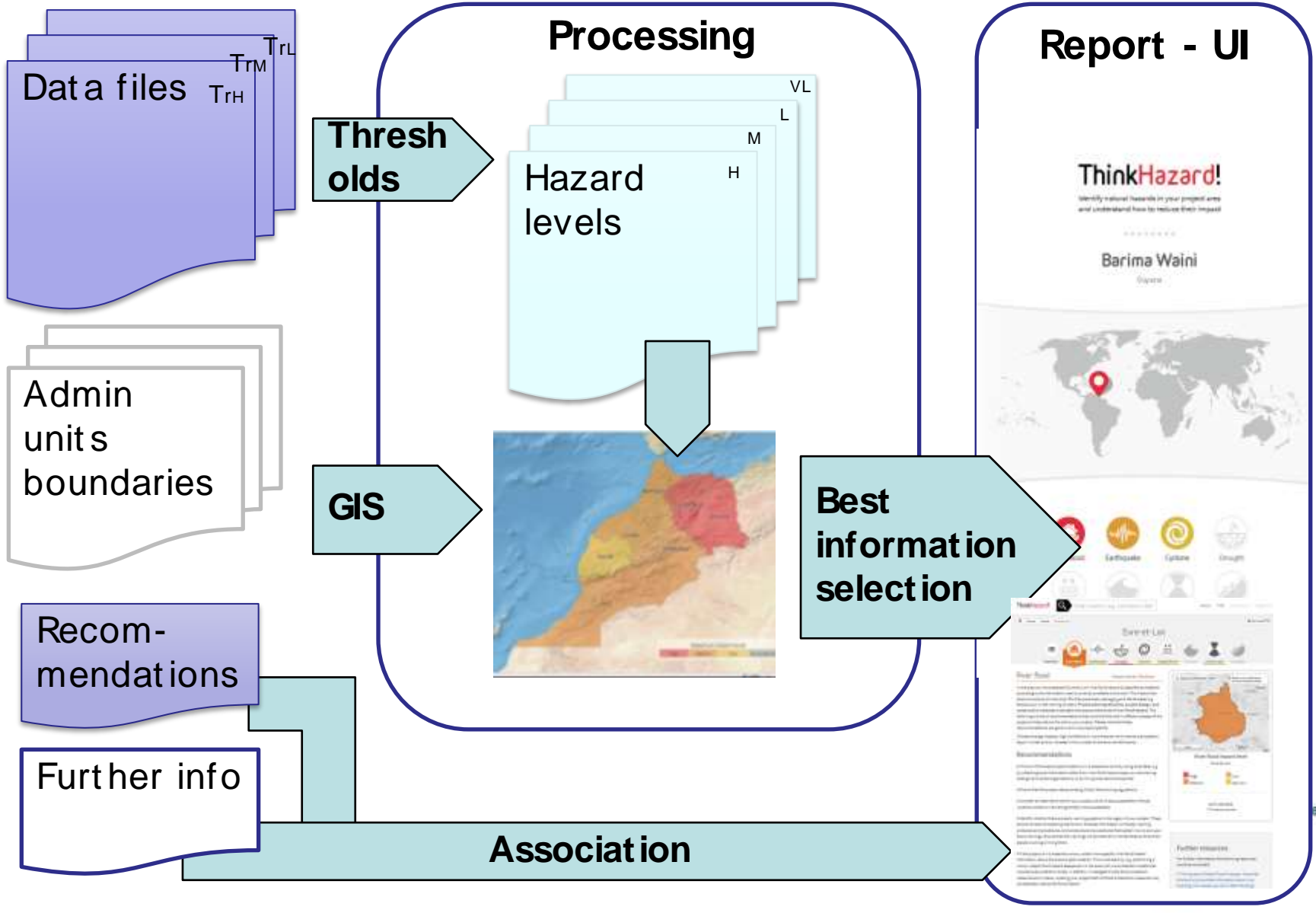
Level	Threshold I	Threshold RP
High	I_H	$<Tr_H$
Medium	I_M	$<Tr_M$
Low	I_L	$<Tr_L$
No evidence		$>Tr_L$



Source: Projet FP7-SHARE



Process

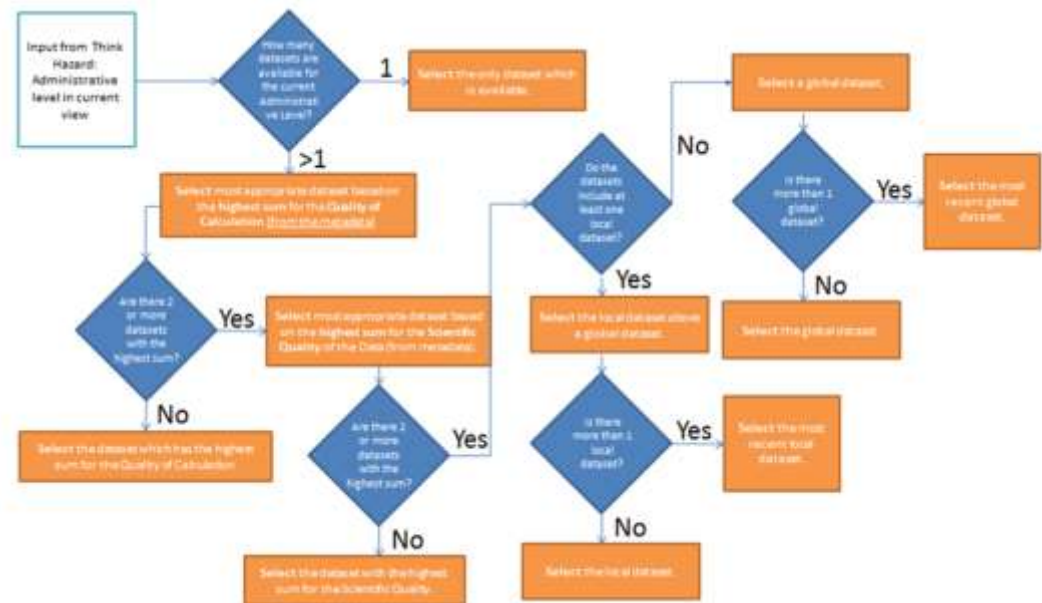
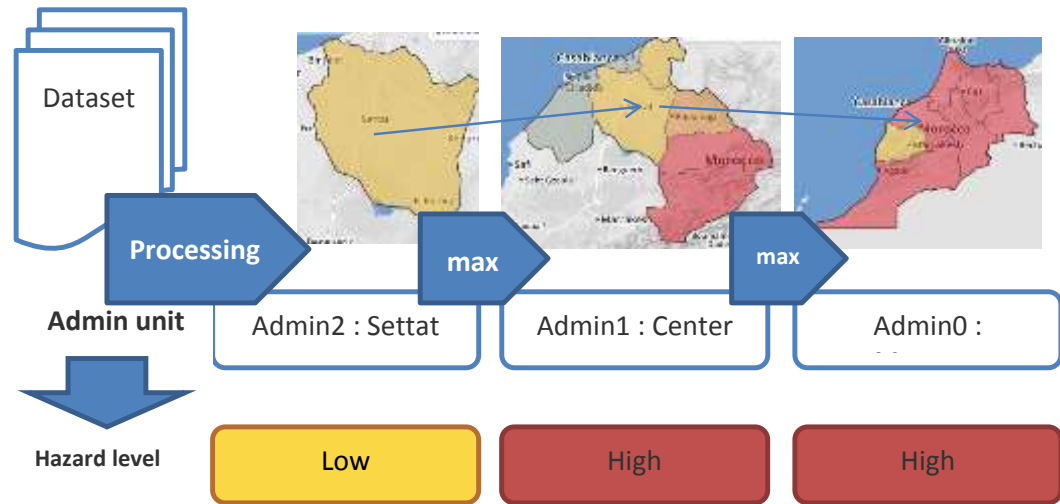


Principles

> Upscaling

> Data files are independent

> Best information
For the area of interest



re durable

Output

Iran (Islamic Republic of)

Download PDF

Iran (Islamic Republic of)



River flood	High
Earthquake	High
Water scarcity	High
Volcano	High
Landslide	High
Cyclone	Medium
Coastal flood	Medium
Tsunami	No data available

HAZARD LEVEL



Output

ThinkHazard!

About FAQ

Iran (Islamic Republic of) [Download PDF](#)

Overview River-flood **Earthquake** Water scarcity Cyclone Coastal flood Tsunami Volcano Landslide

Earthquake

Hazard level: **High**

In the area you have selected (Iran (Islamic Republic of)) earthquake hazard is classified as high according to the information that is currently available. This means that there is more than a 20% chance of potentially-damaging earthquake shaking in your project area in the next 50 years. Based on this information, the impact of earthquake must be considered in all phases of the project, in particular during design and construction. Project planning decisions, project design, and construction methods should take into account the level of earthquake hazard. Further detailed information should be obtained to adequately account for the level of hazard.

Recommendations

- Earthquake history and hazard:** Get information about major earthquakes and secondary hazards (fires, landslides, liquefaction, tsunami in coastal areas) that have affected the project area in the past and the effects these caused. Contact the governmental organisations (e.g. Ministry of Environment and Geological Survey/ Ministry of Earth Sciences) responsible for earthquake risk management in the project country to obtain more detailed information on the potential earthquake hazard. [More information](#)
- Local building regulations:** Find out if the local building regulations provide for earthquake protection. To do this, engage the local engineering community, especially those serving with the local government, in discussions; or consult external experts. i) If they do, comply with the stipulations with respect to planning, design and construction, including typology of construction, and materials of appropriate quality suitable for use in areas of seismic hazard. ii) If they do not, consider adopting and complying with standards from other medium earthquake hazard areas. [More information](#)
- Site and soil conditions:** Determine whether the project site is likely to be affected by ground failure or other site hazards during an earthquake. Conduct soil investigations which should be performed by a geotechnical engineer who will test the soil at the site and will prepare a report that indicates physical properties of the soil, its bearing capacity, chemical composition, its liquefaction potential, the stability of natural slopes and other considerations for design. Select sites with minimal site hazards if possible. Ensure that the proposed project is not built on or in close proximity to active earthquake faults. [More information](#)
- Technical expertise:** Engage qualified and experienced local (or international) technical professionals: structural and geotechnical earthquake engineers, and also geologists specializing in hazards. Ensure that design and implementation of all project activities, including infrastructure construction and improvements, provide for earthquake protection and comply with local end/or international building standards. [More information](#)
- Design considerations:** Determine the performance requirements of each structure in the project and design accordingly. When calculating performance requirements, consider how collapse, serious damage, or functional losses of project associated infrastructure could affect the local population and environment. For the most vital buildings or infrastructure in the project, higher design standards may be necessary. [More information](#)



Earthquake hazard level

Iran (Islamic Republic of)



DATA SOURCES

GFDRR, SHARE-EU, UNISDR

Further resources

For further information the following resources could be consulted:

- [Natural disasters in middle east and north Africa: A regional overview](#)
- [Understanding Risk in an Evolving World - Emerging Best Practices in Natural Disaster Risk Assessment](#)
- [Defining disaster resilience: a DFID approach paper](#)
- [EMDAT: Country Profile on Historical Disaster Events](#)
- [Global Assessment Report on Disaster Risk Reduction: Country Profiles](#)
- [Guidance on Safe School Construction](#)
- [INFORM: Index for Risk Management](#)
- [Learning from Megadisasters: Lessons from the](#)



Zoom out to Iran (Islamic Republic of)

Earthquake hazard level

Esfahan



DATA SOURCE

UNISDR



Interactivity and perspectives

- > FAQ
- > User feedback

We welcome any suggestions for improvements to the tool, including suggestions of data, recommendations, or resources to include. If you have any, please [provide feedback](#).

- > Improvement path
- > Open source

Conclusions

- > **Global coverage**
- > **Best information procedure**
- > **Evolutive and flexible**
- > **Open source**

www.thinkhazard.org