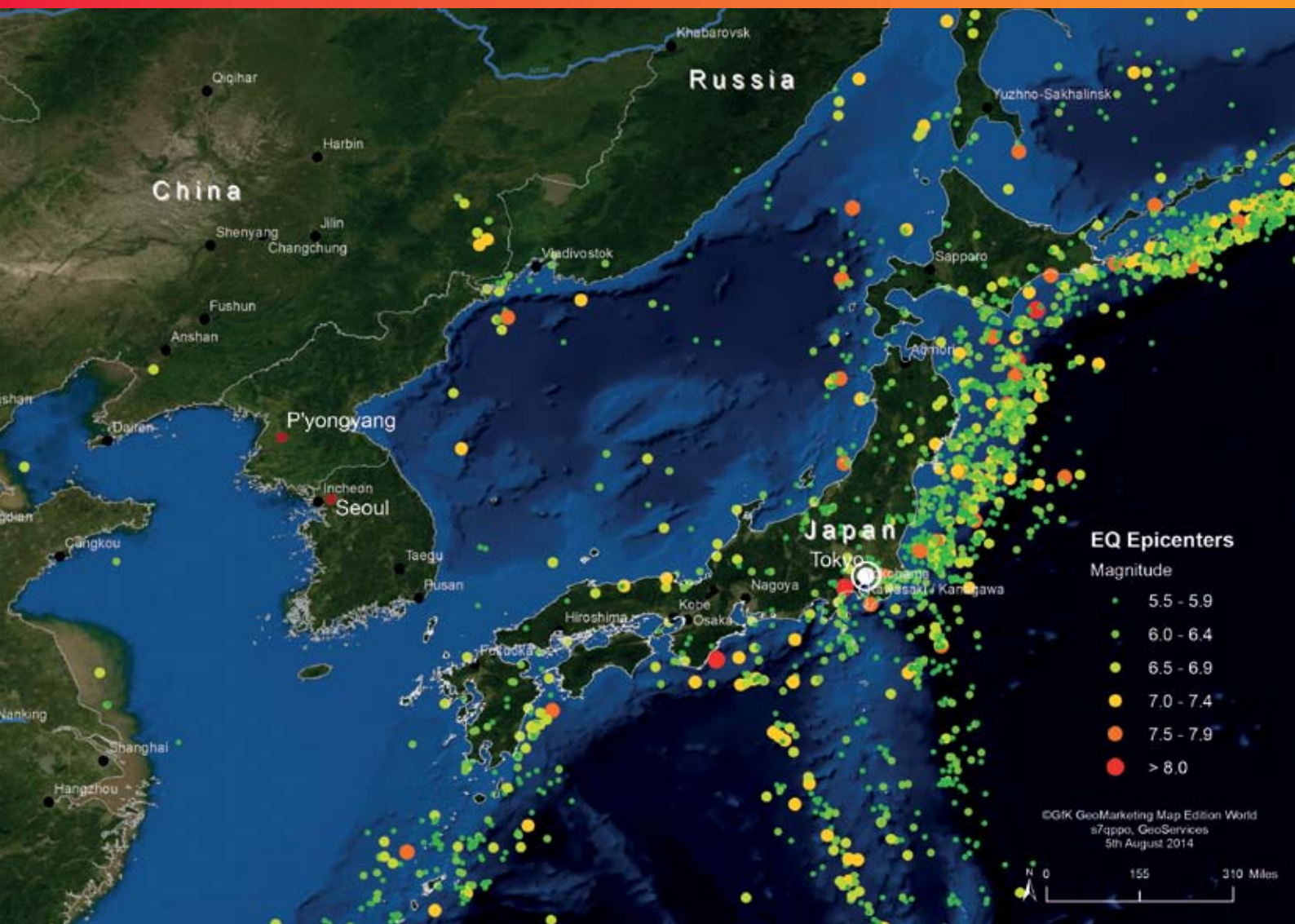


Risky cities:
Tokyo

The Tokyo-Yokohama conurbation is a massive economic hub and highly exposed both to earthquake and river flood risk. Using Swiss Re's risk models and detailed hazard data available in CatNet, we have analysed the potential impact of these risks and other natural perils on Tokyo's metropolitan area. This analysis is part of Swiss Re's report: "Mind the Risk" – a global ranking of cities under threat from natural disasters which compares the human and economic exposure of 616 cities around the world.





CatNet® map showing flood risk in the Tokyo-Yokohama metropolitan area

(Source: GSHAP)

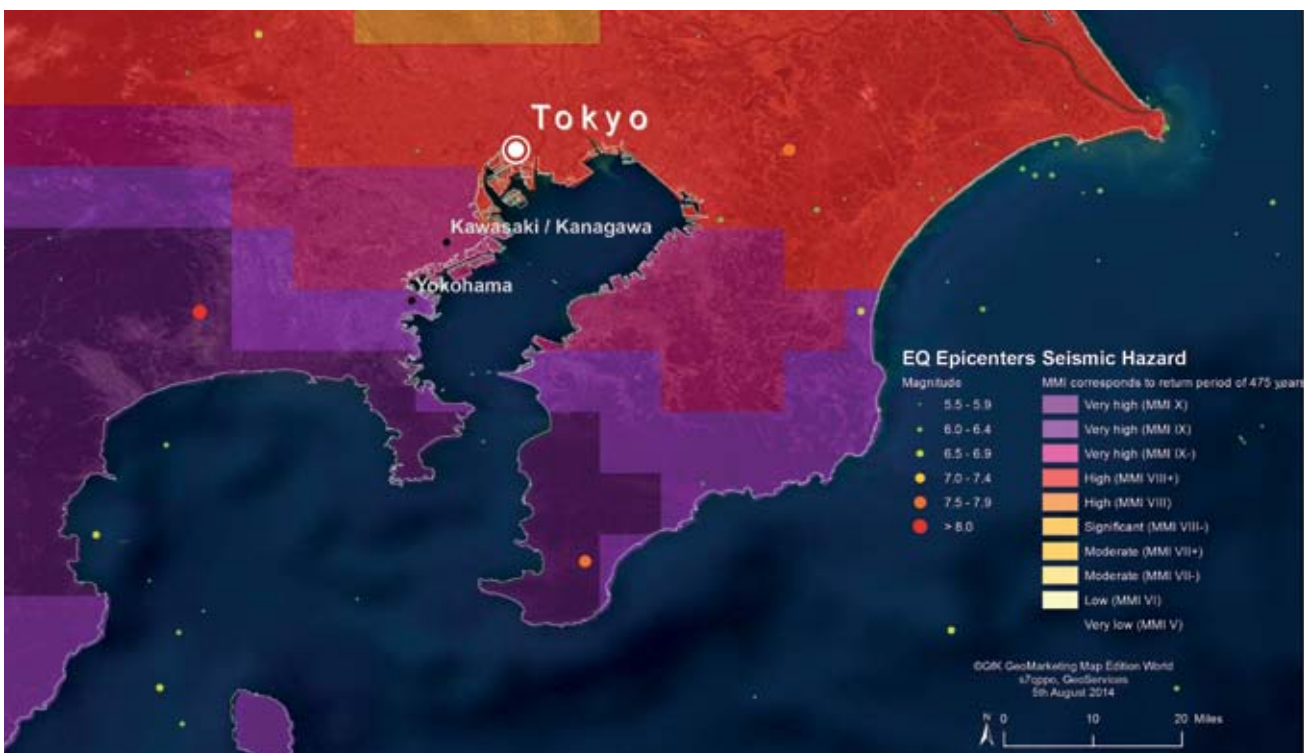
Most of the world’s riskiest cities are situated in East Asia. Besides being exposed to frequent tropical cyclones and flooding, many cities in the region are also threatened by seismic activity, including Tokyo, Taipei and Manila.

With almost 30 million people potentially affected, the metropolitan area of Tokyo-Yokohama is by far the

most earthquake-threatened in Swiss Re’s rankings. Its coastal location and proximity to waterways mean Tokyo-Yokohama is also exposed to river flood.

The exposure of this part of the world to natural disasters became apparent following the Tohoku earthquake and tsunami in 2011. Only 400 kilometers or so to the northeast of Tokyo, this coastal

region was devastated as a result and almost 20 000 people lost their lives. And this was a – relatively speaking – thinly populated area. Imagine the terrible consequences if a severe earthquake were to strike closer to the Tokyo-Yokohama metropolis which ranks as the most densely populated region in the world.



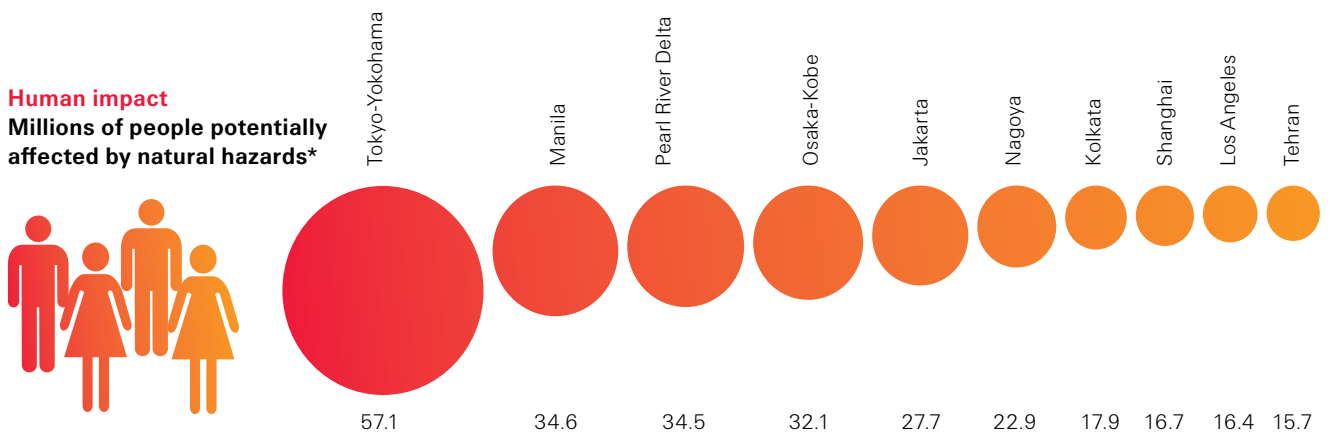
CatNet® map showing earthquake risk in the Tokyo-Yokohama metropolitan area

(Source: GSHAP)

Risky cities: Tokyo in comparison



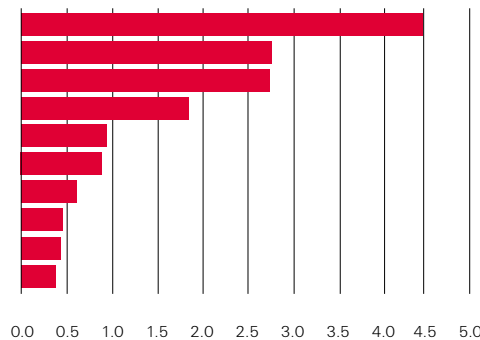
Almost 30 million people live in the Tokyo-Yokohama metropolitan area



Economic impact
Value of working days lost*
in absolute terms

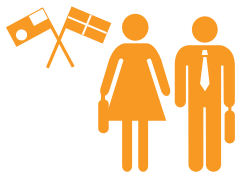


(index 0–5)

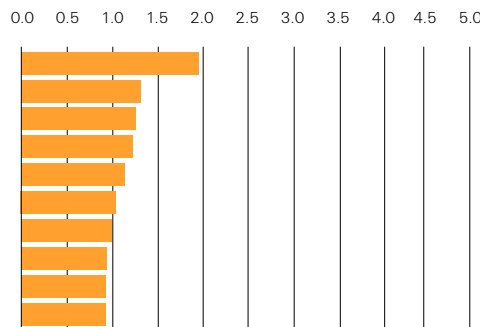


Tokyo-Yokohama
Osaka-Kobe
Nagoya
Pearl River Delta
Amsterdam-Rotterdam
Los Angeles
New York-Newark
San Francisco
Paris
Taipei

Value of working days lost*
relative to national economy



(index 0–5)



Manila
Amsterdam-Rotterdam
Tokyo-Yokohama
San Jose
Guayaquil
Taipei
Ndjamena
Nagoya
Tainan-Kaohsiung
Lima

*Combined risk from five perils (earthquake, river flood, storm surge, windstorm and tsunamis), a global comparison based on aggregated numbers

Our expert



Michael Schwarz
Head Global Partnerships,
East Asia

michael_schwarz@swissre.com
+852 2582 3910
+852 6286 6523

What our cities need

An important part of resilience is how well an urban community can bounce back from the financial consequences of a disaster such as an earthquake, in other words how rapidly it can mobilize the resources necessary to expedite its economic recovery.

Global Partnerships – our capability and solutions

To avoid raising taxes and diverting critical assets when the city and its residents are hurting most, Swiss Re offers risk transfer solutions that can assist with covering the financial burden public entities face. Its risk management experts can also help public authorities prepare for natural disasters more comprehensively than perhaps they have done in the past.

Indemnity insurance

can cover damages or losses caused by natural disasters which can range from seismic activity and flood to wind storms. Indemnity insurance provides protection against damage to property or income loss due to interruption to business or services. It is an insurance policy which pays out based on the actual economic losses incurred, up to the limit and duration specified in the insurance contract.

Parametric insurance

can cover earthquakes, for example. Unlike traditional insurance, parametric instruments use measured or modelled data like the physical characteristics of a disaster (e.g. the magnitude of an earthquake) to determine payouts. Such a payout model aims to mirror the actual damage on the ground and enables a much more rapid settlement. This is critical for cities that require budgetary liquidity after a catastrophic event. The rapid payout is possible because a lengthy loss adjustment is not required to assess the actual damage on the ground. An earthquake-impacted community can therefore receive rapid cash to help with emergency response, debris removal or other expenses. Parametric deals can be settled in days or weeks. This is compared to the months or years it may take to finally close a conventional indemnity insurance claim or to await financial assistance from the federal government.

Weather insurance products

are examples of a parametric insurance cover which protect cities against the impact of adverse weather on their property or their ability to operate as expected. This can be in the form of unusually heavy rain or snow requiring additional resources to respond, extreme temperature, or strong wind which may put strain on city services. Such products are generally based on meteorological data such as daily temperature changes, frost or precipitation. They allow local governments to control the financial risks associated with adverse weather.

© 2014 Swiss Re. All rights reserved.

Graphic design and production:
Swiss Re Corporate Real Estate & Logistics/
Media Production, Zürich

Disclaimer:

The entire content of this factsheet is subject to copyright with all rights reserved. The information may be used for private or internal purposes, provided that any copyright or other proprietary notices are not removed. Electronic reuse of the data published in this factsheet is prohibited. Reproduction in whole or in part or use for any public purpose is permitted only with the prior written approval of Swiss Re. Courtesy copies are appreciated.

Visit www.swissre.com to download or to order additional copies of Swiss Re publications.

Order no: 1505920_14_en

The value of CatNet® www.swissre.com/catnet

The CatNet® functions and data facilitate a professional overview and assessment of natural hazard exposure for any location worldwide. This makes CatNet® a valuable tool in preparing local, regional and cross-regional risk profiles.

Concretely, it

- provides swift hazard checks for regions you are unfamiliar with
- generates customised maps combined with satellite images
- enables you to import your location data to illustrate risk exposures combined with natural hazard data
- provides country-specific insurance conditions, claims experience and natural disaster loss dimensions