Location Risk Intelligence

Munich RE

Natural Hazards Edition. Nature is changing the rules. Make sure you always stay one step ahead!

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Overview

100bn

US$ overall losses caused by just a single hurricane*

How will your business and assets be affected by natural hazards?

Be prepared for more intense and more frequent natural disasters such as hurricanes, flood events, storms, wildfires, ...

*Hurricane Ian, United States, Cuba, 2022

The question is not if, but how the risks caused by natural hazards will increase

In 2024 natural hazards caused total global losses of around US$ 320 billion. What is striking is that rising temperatures can result in more frequent and intense weather events, leading to even higher losses. 43 such events worldwide each caused damage of at least one billion US dollars or significantly more.

The question of whether your company could also be affected by a similar natural disaster can hardly be answered responsibly without knowing the relevant facts. Especially in view of the dramatically increasing numbers, it is essential that natural hazard risks are included as an integral part of your business decisions to protect your company from their increasingly frequent consequences.

Source: Munich Re, NatCatSERVICE, January 2025

Your biggest risk is not knowing the risks of natural hazards, because ...

... they can threaten the value of your assets and portfolios such as buildings, facilities and infrastructure. Due to their geographical location these may now be exposed to much higher risks than you were previously aware of. This is all the more true if you are aiming for optimal risk diversification and risk-balanced portfolio management.

... if your strategic business decisions do not include such risk assessments, **not only your top and bottom line results may be at risk, but the future viability of the entire company** could also be at stake.

... they can have a direct impact on your business results. Natural hazards can impact the resilience of your value chain significantly. Supply shortages, production facilities unable to operate or the disruption of other parts of the value chain can result in a serious loss of revenue.

How you can turn natural disaster risks into business opportunities with Natural Hazards Edition

Stay ahead of the game by integrating physical risk data into your business processes and decision-making.

- **Invest safely:** Check the risk exposure of individual assets or entire portfolios in advance on the basis of Munich Re's latest risk data.
- **Avoid revenue losses and reputational damage:** Identify potential risks from natural disasters to your assets and portfolios, and proactively steer your investments towards profitable and secure returns.
- **Maintain your business continuity and resilience:** With the globalisation of almost all business sectors, it is vital that your supply chains remain stable and exposed to as little or no natural hazard risk as possible. With Natural Hazards Edition you can stay on top of things - worldwide.
- **Identify risks quickly and reliably:** Thanks to Natural Hazards Edition you can easily identify areas of high risk concentration, and classify them with an overall risk score or a detailed risk exposure with up to 15 individual Hazard Scores.

"The Natural Hazards Edition equips our company with the **necessary knowledge to identify and assess natural disaster risks, facilitating robust decision-making in risk management and underwriting.**"

SOMPO SİGORTA

Barkin Goksel,
Risk Engineer Team Leader,
Sompo Sigorta

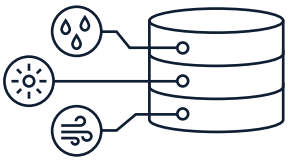
With Natural Hazards Edition you are **always one step ahead**

Natural Hazards Edition gives you access to Munich Re's more than 140 years of natural hazard expertise, enabling you to perform efficient hazard analyses for individual locations or entire portfolios, seamlessly linking local and up-to-date data.

You can identify risk clusters and monitor their accumulation. Dynamic filters give you deep insights into your portfolio, enabling you to assess risks more accurately and make better, more risk-aware decisions. The platform automates the entire process of extracting scalable insights from big data. The next generation of geoservices combines a number of technological developments, such as cloud-based data and artificial intelligence, into one powerful solution.

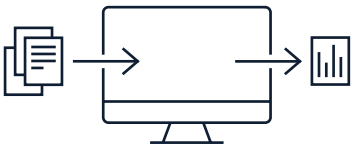
Benefit from comprehensive coverage of all relevant natural catastrophe risks without the need to consolidate or harmonise the data, as all the required information comes from one source and is delivered in an identical format.

Global data coverage gives you access to data of consistently high quality worldwide, so you can rely on it no matter where your assets are located. Munich Re uses these data models itself for its own day-to-day business.

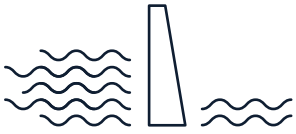


Assess your risk exposure at a glance, based on solid, trustworthy insights from over 140 years of Munich Re's natural disaster assessments.

From the smallest detail to the big picture. Assess single locations, entire portfolios or infrastructure in terms of areas and lines, or keep track with regional and country-specific risk scores.



Stay flexible with data access and export, ensuring easy availability via web and API for processing and exporting data. Perform individual and portfolio risk assessments with comprehensive portfolio management and reporting capabilities.



Use expert knowledge, such as the two "defended" and "undefended" data calculations, to adapt your risk assessments to both of these scenarios and display the different scores.

Use cases that will benefit in particular:

Underwriting
Natural Hazards Edition provides you as an underwriter with a reliable overview of all relevant natural disaster risks, enabling you to make quick and above all risk-aware decisions and increase your profitability.

Investment security
Exposure to natural disasters can make all the difference between a profitable investment and a loss. With Natural Hazards Edition you can assess the risk exposure of individual assets as well as entire portfolios of up to five million assets, enabling you to make and justify informed decisions, instead of relying on guesswork.

Risk modelling
Risk models need to adequately capture the most significant risks to which your business is exposed. With Natural Hazards Edition you can add individual assets to portfolios while modelling your risks. When you price or assess your capital requirements this enables you to take into account rapidly occurring risks with long-term effects such as natural hazards. Or you can aggregate different portfolios to compare them for a better understanding of your risks.

Risk management
Up-to-date, reliable data is the key to successful risk management. Thanks to API data transfer, you can integrate Natural Hazards Edition risk data directly into your existing risk management systems. This not only saves time and increases efficiency, but also gives you a holistic view of your risks.

Third-party risk management
Natural Hazards Edition allows you to perform detailed analyses of each of your suppliers, which you can aggregate into an overall risk distribution picture. Building a diversified multi-sourcing strategy will ensure continuous supply even in the face of natural disasters. The result is a more resilient supply chain that you can rely on.

Scores that score points when it comes to natural hazards

NATHAN Risk Scores are a powerful tool which enables you to gain an overview of your risk situation and quickly identify high-risk assets. They aggregate the risk of each asset in the portfolio in terms of geophysical, hydrological, meteorological and climatological hazards by drawing on data from Munich Re's long years of claims experience and expertise in natural catastrophe modelling. Natural Hazard Scores describe the hazard level of a location for all hazards.

Munich Re's data includes calculations for River Flood and Storm Surge Hazards as well as Flood Risk and Overall Risk Scores on both an undefended and defended basis. The defended calculation includes flood defences such as flood walls, embankments and the like, which are assigned a defined Standard of Protection (SoP). The undefended dataset provides a clear picture of what the situation would be like if there weren't any defences in place, or what would happen if they failed. This enables accurate worst-case scenario planning. - worldwide! After all, only globally consistent data allows for a reliable global assessment.

Natural Hazard Scores*

Natural Hazard Scores describe the hazard level of a location for all hazards.

River Flood	This Hazard Score is based on a global flood model from JBA, describing flood extents for return periods of 50, 100 and 500 years, and is available on both an undefended and defended basis, i.e. taking flood protection into account.
Flash Flood	The Flash Flood Hazard Score describes the hazard level, based on meteorological data, soil sealing information as well as terrain and hydrographic data (slope and flow accumulation).
Storm Surge	Storm surges are coastal floods caused by storms such as tropical cyclones and extratropical storms. The Storm Surge Hazard Score reflects the inundation area for return periods of 100, 500 and 1000 years and is available in an undefended as well as a defended view, i.e. taking flood protection into account.
Tropical Cyclone	The Tropical Cyclone Hazard Score is derived from globally consistent, basin-specific models for tropical cyclones, and is based on probable maximum wind intensities with a return period of 100 years.
Extratropical Storm	The Extratropical Storm Hazard Score shows the probable maximum wind intensity occurring during extratropical storms in the region (approx. 30 – 70° north and south of the equator) for a 100-year return period.
Hail	The Hail Hazard Score describes the hail potential by combing meteorological data, elevation and the global distribution of lightning activity.
Tornado	The Tornado Hazard Score is based on the annual frequency of tornadoes over an area of 10,000 km², interpolated from meteorological data.
Lightning	This Hazard Score shows the global frequency of lightning strikes per km² and year recorded by satellites and ground-based lightning detection networks.
Earthquake	The Earthquake Hazard Score is graded according to the probable maximum intensity of earthquakes on the Modified Mercalli Intensity (MMI) scale for an event with a return period of 475 years.

Volcano	The Volcano Hazard Score is based on volcanic activities, which are classified depending on their VEI (Volcano Explosivity Index) and annual return periods.
Tsunami	The Tsunami Hazard Score reflects the flood inundation areas for return periods of 100, 500 and 1000 years.
Wildfire	The Wildfire Hazard Score describes the hazard of wildfire, based on climatological data and land cover data.
Subsidence	The Subsidence Score describes the hazard of gradual sinking or sudden collapse of the ground. It accounts for natural shrink-swell subsidence in clay soils as well as anthropogenic subsidence due to groundwater depletion, groundwater depletion-related sinkholes and mining activities.
Avalanche	The Avalanche Score describes the threat posed by snow avalanches and is derived from potential avalanche starting zones and likely flow paths, taking into account elevation and land-use data.
Landslide	The Landslide Score describes the landslide hazard on a global scale, combining rainfall-triggered and earthquake-triggered landslide hazards.

NATHAN Risk Scores*

NATHAN Risk Scores provide an overview and identify high-risk assets. They aggregate the risk of each asset in the portfolio in terms of geophysical, hydrological, meteorological and climatological hazards.

Overall	The Overall Risk Score can be used as a primary identifier of red flags. It combines the Earthquake, Storm and Flood Risk Scores, while also taking Wildfire Risk into account.
Earthquake	The Earthquake Risk Score can be used to identify earthquake-related risks and includes Earthquake, Volcano and Tsunami risks.
Storm	The Storm Risk Score can be used to identify storm-related risks and includes Tropical Cyclone, Extratropical Storm, Hail, Tornado and Lightning risks.
Flood	The Flood Risk Score can be used to identify flood-related risks and includes River Flood, Flash Flood and Storm Surge risks.

* The availability of the scores listed in this brochure is subject to change and may not be included in future offerings. Please refer to the official product description for the latest details.

Want to know more? Get part 2/2 of our Climate Change Edition brochure for more in-depth information

Download part 2/2

See our other editions as part of our Location Risk Intelligence Platform:

Natural Hazards Edition
Wildfire HD Edition
Climate Financial Impact Edition
Reporting Edition

Get your personal demo of the edition you are interested in:

Get a demo

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