

RMS Philippines Typhoon and Inland Flood Model

Captures Risk From Typhoon Wind and Flooding, Coastal Storm Surge, and Seasonal Precipitation-Driven Flooding



KEY FEATURES AND BENEFITS

- Captures the risk from typhoon wind and flooding plus seasonal monsoon-driven flooding
- Precipitation-driven inland flood model and fully hydrodynamic surge model for key coastal areas
- Hazard modeled at high geographical resolution to accurately capture the variations in risk
- Stochastic event set contains thousands of tropical cyclone tracks to capture the full spectrum of landfalling and bypassing storms
- Model includes almost 1,000 unique region-dependent vulnerability curves reflecting local design and building practices.
- Additional options:
 - Industrial Facilities Model (IFM)
 - Builders Risk Model (BRM)
 - Explicit modeling of the impact of post-event loss amplification (PLA)
 - Industry Exposure Database (IED) and Industry Loss Curves (ILC) will be released alongside the model

Overview

Situated on the Pacific Ring of Fire and in the western North Pacific Typhoon Basin, the Philippines is one of the most disaster-prone countries in the world. Approximately 20 tropical cyclones enter the Philippine Area of Responsibility each year, with around eight making landfall. The transition of the Philippine economy from agriculture to services and manufacturing has increased the value of exposure at risk to typhoons and flooding.

The RMS® Philippines Typhoon and Inland Flood Model enables users to model the typhoon-related risks of wind, typhoon-driven flood, and storm surge, in addition to seasonal and monsoon flood events. The model expands the RMS suite of climate modeling solutions to the Philippines.

Complete Wind and Flood Risk Solution

Tropical cyclones bring the associated perils of strong wind, heavy precipitation, and storm surge leading to flooding. These three typhoon-related perils are captured by a set of thousands of stochastic tropical cyclone tracks representing the full spectrum of potential landfalling and bypassing events to affect the Philippines. In addition, the southwest *Habagat* monsoon from May to October, and northeast *Amihan* monsoon from November to April can bring heavy rainfall and flooding. Such monsoonal and seasonal flood events are also captured in the model, providing a complete view of flood risk in the Philippines.

Within the Philippines Typhoon and Inland Flood Model, the typhoon-induced flooding and flood events from monsoon and seasonal rainfall are captured by precipitation models, and this allows for spatial correlations in flooding. The flood model also accounts for local flood defenses and urban drainage systems.

The Philippines comprises thousands of islands and possesses the fifth longest coastline of any country in the world. Coastal flood risk is assessed using a fully hydrodynamic storm surge model, driven by the wind field of each stochastic typhoon event. The storm surge model covers the main areas at risk in the Philippines, including western Luzon and the Visayas islands, as well as the area surrounding Laguna de Bay.

SUPPORTED SOLUTIONS

RiskLink®, RiskBrowser®, and Risk Modeler™

- Detailed Loss Model (DLM) accepts high-resolution exposure data for residential, commercial, and industrial lines of business including detailed address information, construction and occupancy descriptions, building height, and year built, for buildings, contents, and time-based risk coverages
- Aggregate Loss Model (ALM) available for aggregate exposure for residential, commercial, and industrial lines of business

Client Support

- Global Client Support services ensure continuous availability of knowledgeable support staff, fulfillment and deployment services, RMS experts, and product and industry training
- Access to comprehensive, transparent documentation, including model methodology and validation information
- Event Response Team provides accurate information about potential impacts of a major catastrophe within agreed peril-specific timelines

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RMS is the world's leading catastrophe risk modeling company. From earthquakes, hurricanes, and flood to terrorism, agriculture, and infectious diseases, RMS helps financial institutions and public agencies understand, quantify, and manage risk.

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High-Resolution Hazard Modeling

The wind and flood hazards in the Philippines Typhoon and Inland Flood Model are modeled on the proprietary RMS variable resolution grid (VRG) to ensure the highest hazard resolution where the greatest risk and highest exposures occur. This is particularly important for the flood peril, as flood depths can vary considerably even within very short distances. Modeling risk at high resolution allows for improved risk selection and pricing, assisting users in identifying the most profitable locations for writing new business and determining which areas are driving losses.

Risk Differentiation Using Comprehensive Vulnerability Module

Building characteristics, including construction type and building height, can have a significant impact on the loss experienced from a typhoon or flood event. The Philippines Typhoon and Inland Flood Model contains almost 1,000 vulnerability functions and five vulnerability regions to assess the losses from wind and flood perils for different building types. To increase the accuracy of loss results, the model allows users to define secondary modifiers, such as basement information (highly influential on flood losses) and roof characteristics (important for wind loss estimation).

Where primary building information is not available, the model uses a building inventory, developed using satellite data combined with detailed national building census data, to approximate the typical building characteristics for that location. The effects of post-event loss amplification (PLA) are included to reflect the impact of more extreme loss-causing events.

Accurate Loss Modeling for Specialty Risks

Supplementary vulnerability models are available to aid the assessment of several types of specialty risk in the Philippines. The Industrial Facilities Model (IFM) includes additional vulnerability curves to allow users to specifically define the types of industrial exposure within their portfolios, leading to more accurate modeled loss results. The Builders Risk Model captures the unique vulnerabilities and value ramp-up characteristics of buildings under construction.

The Philippines also has a significant shipping industry and many large port facilities. The Marine Cargo and Specie Model can be used to assess the wind and surge risk for hundreds of product and storage combinations.

Find Out More

For more information, visit www.rms.com, email sales@rms.com, or contact your RMS sales representative.