RMS India Inland Flood Model and Data Products

Comprehensive Solution for Flood Risk Assessment and Pricing Across India

KEY FEATURES AND BENEFITS

- A complete view of flood risk, accounting for fluvial and pluvial (urban/flash flood) flooding

- Event set based on 125,000 events across 9,033 catchments throughout India

- Compatible with all geocoding resolutions from location level to state level

- Continuous precipitation rainfall runoff model enables modeling of antecedent conditions and urban flooding

- Compatible with a range of exposure types enabled by 1,000+ India-specific vulnerability curves

- Modeling for residential, commercial, motor, industrial lines (including specific Industrial Facilities Model), and builders risk

- Robust financial model provides access to all relevant financial perspectives

- Consistency between underwriting and portfolio management enabled by availability of high-resolution hazard maps, peril ratings database, and RiskScores

Overview

Flooding is the most significant natural hazard affecting India, comprising around three-quarters of all natural catastrophe losses. Risk from major river floods, summer and winter monsoon rains, and tropical cyclones occurs throughout the country, ranging from localized events to extensive inundations. Yet, flood is still an underinsured peril in India.

To help (re)insurers safely expand their business in this fast-growing market, RMS® developed a comprehensive flood solution, including a state-of-the-art probabilistic model and a suite of underwriting data products completely consistent with the probabilistic model. This solution supports all use cases, from underwriting to portfolio and capital management. The model provides a broad range of exposure types and resolutions, extending from motor to industrial properties and from individual locations to country-wide portfolios.

A Fully Probabilistic Flood Model

RMS developed the flood solution for India by deploying the latest science combined with local engineering expertise. The stochastic set at the core of the solution is based on a continuous precipitation rainfall-runoff inundation model, which assesses all sources of inland flood risk from location level to country level.

The RMS India Inland Flood Model provides a deeper understanding of flood risk accumulation and represents an optimal platform to grow a more diverse business.

Advanced Pluvial Flooding Solutions

With expanding areas of impermeable ground and relatively minor drainage capacity, major cities in India – such as Mumbai, Chennai, and Delhi – are highly susceptible to significant risk. Urban flooding events including those in Mumbai (2005), Chennai (2015), and Kolkata (2017) highlight the magnitude of this issue.

The India Inland Flood and Data Products provide a new pluvial flood risk solution, which explicitly models monsoon rainfall at its core. This solution allows for more complete flood footprints and, in turn, more realistic losses than those currently provided in the market.

Comprehensive Modeling Solution

Rapid regional urbanization and development producing a wide range of building types and exposures are considered in the RMS India Inland Flood Model.

Over a thousand vulnerability functions are evaluated by coverage type, and a detailed building inventory database supplements insured exposure. Additional solutions can be used for underwriting industrial facilities (Industrial Facilities Model), buildings under construction (Builders Risk Model), a broad range of motor lines, business interruption, and post-event loss amplification.

Consistent Approach

The RMS India Inland Flood Maps offer defended and undefended views of hazard, covering all sources of flooding at a range of return periods. The peril ratings databases evaluate flood hazard and loss potential, enabling instantaneous risk selection and pricing decisions, and RiskScores provide a quick and effective means to assess flood risk at a location.

RMS data products uniquely employ the same methodology as the probabilistic model. Using RMS data products for underwriting and pricing and RMS stochastic models for portfolio, reinsurance, and solvency management ensures consistent, confident delivery of a desired flood business strategy in India.

High-Quality Calibration

RMS calibrates and validates every model component individually, enabling RMS to create consistent derivative data products such as hazard maps and peril rating databases. Extensive, well-established quality assurance and product acceptance testing for each component produce consistency between model components and overall losses, with full transparency providing confidence in the validity of the model results.

Find Out More

Ask your RMS sales or customer services representative for more information on the RMS India Inland Flood Model and Data Products, call +44.20.7444.7600, or email **sales@rms.com**.