



Focus on Asia Pacific Risks

Flood Risk Challenges in Asia

Flood is one of the most significant natural catastrophe perils, globally accounting for nearly 40 percent of all catastrophe events. In 2017, floods accounted for nearly half of the natural catastrophe events and 65 percent of natural catastrophe deaths in the world – two thirds of the deaths occurring in Asia. According to the Lloyd’s City Risk Index, which examines flood risk as a percentage of GDP, nine of the top 10 cities at risk are located in Asia, according to Mark Weatherhead, Head of Model Development – International, Guy Carpenter.

“The Asia region is particularly prone to flooding because of a combination of three factors: hydrology, population density and mitigation,” Weatherhead says. “Much of Asia, especially southern Asia, is subject to extreme seasonal rainfall from monsoons and typhoons. Secondly, Asian cities are much denser than their European counterparts, with increasingly concentrated urban areas built around rivers and in coastal areas. Finally, investment in flood mitigation measures has not accelerated at the same pace as population growth.”

Climate change projections from the Intergovernmental Panel on Climate Change point to greater extremes in both the intensity of rainfall events and droughts – this is especially true for Asia, which is expected to suffer significant increases in flood frequency over the entire region. “In addition to the increases in extreme precipitation, changes in sea levels will threaten densely populated coastal areas. Initial projections for economic loss for the region are in the range of USD 1.5 trillion and USD 14.3 trillion by 2100, depending on the warming scenario and extent of sea level rise,” he explains.

“The combination of population growth and flood hazard will force societal changes to cope with the rising risk,” he adds. “A significant investment in adaptive measures such as flood defenses is required over the next 20-30 years in order to

maintain even the current level of flood risk. Nations will need to take active measures such as improvements to storm drains and physical defenses, and more passive approaches around improving urban planning, halting wetland encroachment and implementing better building standards.

While flood is a main driver of economic loss, the majority of flood risk in Asia is not insured. Absent insurance cover, event recovery is dependent on government outlays that may not materialize quickly and are often limited in scale. Insurance protection brings more rapid payouts and more complete coverage (at a price), significantly shortening recovery time and reducing the longer-term financial burden for individuals and governments,” he says.

Climate change projections from the Intergovernmental Panel on Climate Change point to greater extremes in both the intensity of rainfall events and droughts – this is especially true for Asia

The challenge for the private insurance industry is to close the protection gap in ways that are practical and affordable for the region. In many cases this will require new products and approaches. As they develop new insurance products, insurers must overcome a lack of full understanding of the extent of flood risk.

“Positively, new data products, such as flood hazard maps, have become more readily available in the past few years, from both private- and public-sector sources and have helped the insurance industry estimate flood hazard.” Weatherhead continues, “However, to improve loss assessments, hazard data should be combined with other data types, such as probabilistic event sets and defense information. The products used by the insurance industry can also be used by governments to help with urban development planning and preparation for event response; to define and quantify the need for flood defenses; and to inform citizens and businesses of their flood risk.”

Guy Carpenter has made a significant investment in data and technology to help our clients improve their understanding of flood risk. He concludes, “The investment includes both upgrading existing flood models and developing new models on a global scale. The new models are being released and we will make more detailed announcements as they become available.”

About Guy Carpenter

Guy Carpenter & Company, LLC is a leading global risk and reinsurance specialist with more than 2,300 professionals in over 60 offices around the world. Guy Carpenter delivers a powerful combination of broking expertise, trusted strategic advisory services and industry-leading analytics to help clients adapt to emerging opportunities and achieve profitable growth. Guy Carpenter is a wholly owned subsidiary of Marsh & McLennan Companies (NYSE: MMC), the leading global professional services firm in the areas of risk, strategy, and people. With nearly 65,000 colleagues and annual revenue over \$14 billion, through its market-leading companies including Marsh, Mercer and Oliver Wyman, Marsh & McLennan helps clients navigate an increasingly dynamic and complex environment. For more information, visit www.guycarp.com. Follow Guy Carpenter on Twitter @GuyCarpenter.

About Guy Carpenter

Guy Carpenter & Company, LLC is a leading global risk and reinsurance specialist. Since 1922, the company has delivered integrated reinsurance and capital market solutions to clients across the globe. As a most trusted and valuable reinsurance broker and strategic advisor, Guy Carpenter leverages its intellectual capital to anticipate and solve for a range of business challenges and opportunities on behalf of its clients. With over 2,300 professionals in more than 60 offices around the world, Guy Carpenter delivers a powerful combination of broking expertise, strategic advisory services and industry-leading analytics to help clients achieve profitable growth. For more information on Guy Carpenter’s complete line-of-business expertise and range of business units, including GC Specialties, GC Analytics®, GC Fac®, Global Strategic Advisory, GC Securities*, Client Services and GC Micro Risk Solutions®, please visit www.guycarp.com and follow Guy Carpenter on LinkedIn and Twitter @GuyCarpenter.

Guy Carpenter is a wholly owned subsidiary of Marsh & McLennan Companies (NYSE: MMC), the leading global professional services firm in the areas of risk, strategy and people. The company’s more than 60,000 colleagues advise clients in over 130 countries. With annual revenue over \$13 billion, Marsh & McLennan helps clients navigate an increasingly dynamic and complex environment through four market-leading firms. Marsh advises individual and commercial clients of all sizes on insurance broking and innovative risk management solutions. Guy Carpenter develops advanced risk, reinsurance and capital strategies that help clients grow profitably and pursue emerging opportunities. Mercer delivers advice and technology-driven solutions that help organizations meet the health, wealth and career needs of a changing workforce. Oliver Wyman serves as a critical strategic, economic and brand advisor to private sector and governmental clients. For more information, visit mmc.com, follow us on LinkedIn and Twitter @mmc_global or subscribe to BRINK.

*Securities or investments, as applicable, are offered in the United States through GC Securities, a division of MMC Securities LLC, a US registered broker-dealer and member FINRA/NFA/SIPC. Main Office: 1166 Avenue of the Americas, New York, NY 10036. Phone: (212) 345-5000. Securities or investments, as applicable, are offered in the European Union by GC Securities, a division of MMC Securities (Europe) Ltd. (MMCSEL), which is authorized and regulated by the Financial Conduct Authority, main office 25 The North Colonnade, Canary Wharf, London E14 5HS. Reinsurance products are placed through qualified affiliates of Guy Carpenter & Company, LLC. MMC Securities LLC, MMC Securities (Europe) Ltd. and Guy Carpenter & Company, LLC are affiliates owned by Marsh & McLennan Companies. This communication is not intended as an offer to sell or a solicitation of any offer to buy any security, financial instrument, reinsurance or insurance product.