

## HOW BUSINESS CAN INSURE AGAINST CLIMATE RISKS

*Insurance plays a vital role in protecting people, businesses, and public institutions against shocks, allowing them to transfer risks and purchase security. Insurers in advanced economies even act as financial intermediaries. In many emerging economies, however, insurance is still in a nascent stage. Yet it has the potential to become a critical tool for businesses to build operations that are resilient to climate change while also providing a source of economic growth. For insurance in emerging economies to take off, the public and private sectors must first lay the necessary groundwork.*

Many elements will go into making emerging-market countries more resilient to climate change. But a lack of developed insurance markets in these countries puts them in a tenuous position as they deal with the effects of the changing climate. Because they are often densely populated and more exposed to slow-onset climate-related changes such as water scarcity, low-income and middle-income countries have experienced the largest human and economic losses from climate threats.<sup>1</sup>

Insurance mechanisms play an important social, economic, and financial role for managing risks across the world. Yet emerging economies account for only about 16 percent of the \$4.6 trillion global insurance market, with an even smaller share of property and casualty coverage. Without insurance proceeds to help rebuild after a disaster, these countries are often one climate shock away from a major setback in economic growth. And funds used to finance recovery often come directly from government coffers in these countries, diverting money from other priorities.

Nor do disaster relief funds don't guarantee full recoveries for communities and businesses. Even in high-income countries, many small and medium sized businesses never reopen after a disaster. Once their buildings and other collateral are destroyed, many have trouble securing the necessary loans to rebuild.<sup>2</sup> In 2011, for example, floods in Thailand caused \$30 billion in damages, including damages to the country's burgeoning manufacturing sector. Companies and industries had a combined \$12 billion in coverage, resulting in a gap between damages and insurance of some \$18 billion. In addition, rebuilding costs for the Thai government totaled more than \$13 billion. Those costs dramatically affected Thailand's economy, which shrank 9

percent in the fourth quarter of 2011, compared to a year earlier, according to Thailand's National Economic and Social Development Board.

The potential benefits of insuring against climate related events in emerging markets can be measured in both humanitarian and economic terms. Insurance can help emerging markets better protect their economies from climate related threats, distributing the costs of daily as well as catastrophic events and reducing the potential burden on public finances. In a study that looks at China, Japan, Thailand, the United Kingdom, and the United States, insurer Lloyd's of London estimates that a 1 percent increase in insurance penetration can reduce the burden on taxpayers by 22 percent, providing an economic cushion in times of disaster.<sup>3</sup>

According to a Bank of England working paper "...the size of the financial losses arising from the occurrence of a given hazard and the allocation of those losses are influenced by the *ex-ante* decisions of the financial sector. For example, the amount of insurance and credit available for financing the construction of buildings in flood-prone areas will determine the size of the eventual financial losses arising from the materialization of such risks, as well as the allocation of losses."<sup>4</sup>

Over the long term, insurance can actually help free up resources for businesses. Without having to set aside a large amount of reserves in case of disaster, business have additional short-term resources to invest in protecting operations against climate shocks. Furthermore, insurance companies and their investment arms promote the development of local financial markets while increasing access to capital by businesses.

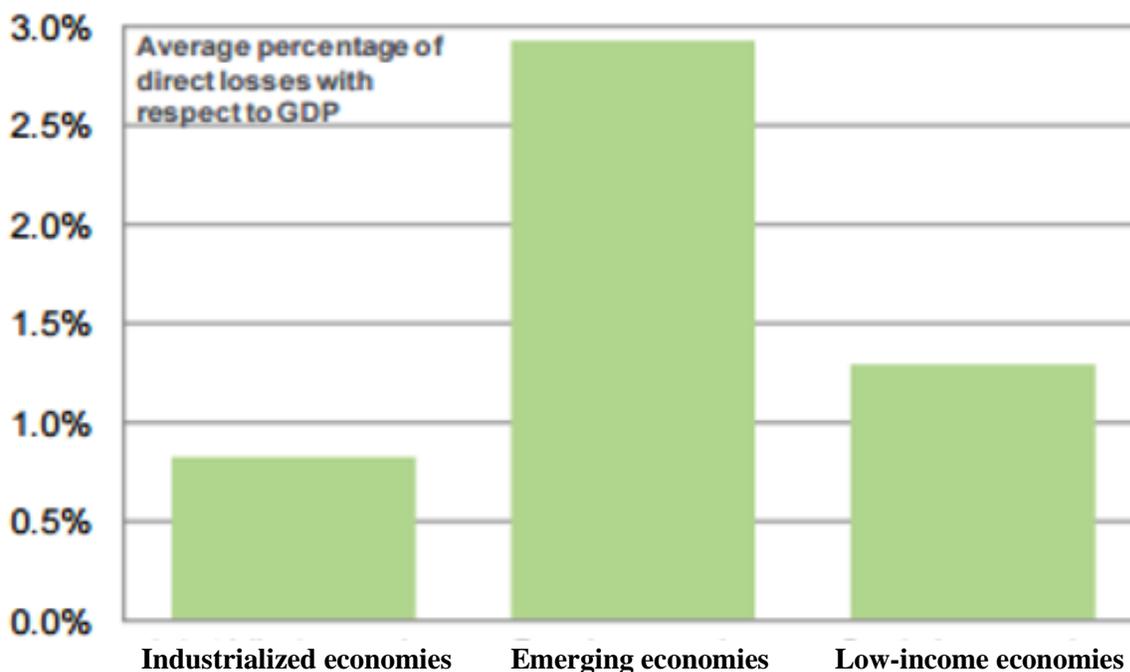
## BUILDING INSURANCE MARKETS

Because insurance is a complex financial product that requires sophisticated infrastructure, information flows, and intermediaries, both public policy makers and the private sector have active roles to play in building insurance markets in emerging economies. Unfortunately, insurance in emerging markets is not yet viewed as essential to prepare for climate change.

Financial sector companies—insurance intermediaries, brokers, and agents—manage different aspects of policyholders’ risks and

distribute them. Primary insurers, for example, collect the risk profiles of underlying policyholders and pass them on to reinsurers. Reinsurers purchase a portion of those risks from insurers and aggregate them so that front-line insurers can remain sustainable and solvent when disaster strikes. Any information breakdown along this chain can lead to market problems, including incorrect pricing, inadequate loss reserves, insufficient equity capital, and poorly designed reinsurance programs. Without the necessary information about potential risks, businesses will have trouble managing them.

**Average Annual Direct Losses from Natural Disasters Compared to GDP**



Emerging economies face the highest average of direct losses per year with respect to GDP.  
Source: Calculations of Munich Re Economic Research based on data of NatCatSERVICE

In order to maintain properly functioning insurance markets, public policy makers—and finance ministries in particular—need to develop specific policies and regulations that promote the propagation of objective, clear, comparable, and timely information about climate risks.

A study by the consulting firm Deloitte for IFC emphasizes the important role of governments in creating the necessary conditions for insurers and other private companies to invest in climate resilient development.<sup>5</sup> Regulations and incentives best address some risks such as limiting buildings in areas prone to flooding, according to the study. To allow private companies,

including insurers, to address other risks, governments should promote public information such as weather forecasts and emergency warning systems, which are not always available in emerging countries. The study focused on five areas where governments can promote private sector efforts to mitigate climate change: data and information, institutional arrangements, policies, economic incentives, and communication, technology, and knowledge.

Efforts to better disclose climate risks are already underway in many countries. In 2016 the Task Force on Climate Related Financial Disclosures sought to develop voluntary climate risk

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disclosure mechanisms for companies in major economies around the world. By creating these policies when insurance markets are still in development and placing an emphasis on disclosure up front, emerging markets have a better chance of building more transparent insurance sectors. With a clear understanding of climate risks and their potential impact on the overall economy, policymakers can then foster insurance markets that emphasize preventative measures to soften the blow of climate shocks.

## EXAMPLES OF INNOVATIVE APPROACHES IN EMERGING MARKETS

International development finance institutions have been using innovative approaches to help emerging market countries create insurance products that fit into their overall development plans. Many of these approaches target specific threats such as floods, storm surges, or losses to agriculture productivity. Agricultural insurance, for example, generally allows small enterprises to transfer the risk of a large and possibly devastating loss from an extended drought or heat wave to a third party in exchange for a predictable premium.

Agricultural insurance also helps small businesses manage specific sector risks that arise even when they are taking the appropriate steps—irrigating fields and using pest management, for example—to head off other climate-related threats to production, such as extraordinary rainfall or drought. These insurance products—examples are production, weather, and commodity price insurance—can cover crops, livestock, and fisheries, and are especially important for climate related risks. In addition to reimbursing small business owners for losses beyond their control, they can serve as collateral for agricultural loans and provide a safety net for investments.

Catastrophic insurance programs have also been adapted to help emerging market countries address climate-related disaster risks. They are well suited to the purpose because they quickly transfer funds to policy holders when climate related disaster strikes. Some countries have even entered into regional catastrophe insurance pools that give them access to international reinsurance markets with competitive rates. The programs also give the global reinsurance industry an opportunity to enter new markets.

Another innovative insurance product in emerging markets is designed for hydropower and wind power projects and tackles the problem of increasingly unpredictable weather patterns. Unexpected droughts and changing wind patterns make it a challenge to calculate the output of alternative energy plants.<sup>6</sup> In response, Swiss Re developed precipitation index insurance for Guangdong Meiyuan Hydropower, which operates hydroelectric

stations in China. When precipitation falls below a certain level, the insurer pays out a certain amount to the company.

Index insurance targets small agricultural businesses in emerging markets. Insurers pay benefits to business owners on the basis of a pre-determined index such as rainfall level, seismic activity, or livestock mortality. When the owner faces capital losses because of weather related events, the insurer pays them without a traditional assessment. The Global Index Insurance Facility is a multi-donor trust fund that seeks to expand index insurance in emerging markets, primarily in Sub-Saharan Africa, Latin America and the Caribbean, and the Asia Pacific region. GIIF's implementing partners have covered more than 600,000 farmers, pastoralists, and micro-entrepreneurs with \$119 million in assets insured, and reached more than one million people with information and access to index insurance.

The Agriculture and Climate Risk Enterprise was launched in 2009 and uses mobile technology to provide index insurance to farmers in Kenya and other African nations. So far it has insured more than 200,000 farmers with its portfolio of index insurance products, which track weather and yields, among other metrics.

The insurance portfolio has more than \$12 million under management, and as of 2013 paid out about \$370,000. Insuring one acre of maize against drought costs a farmer about \$37, or 10 percent of harvest value. Farmers can pay premiums through a mobile phone, and insurers can transfer payouts to the farmer's mobile wallet at the end of the season. In Kenya and Rwanda, where more than 96 percent of agricultural land is rain-fed and so is vulnerable to drought and erratic rainfall, this type of insurance also opens up credit sources for small farmers. With support from IFC, the program plans to expand to one million farmers in coming years.

Blue Marble Micro-insurance, launched in 2015, reaches people in low-income countries who have no safety net in the event of natural disasters. The organization's efforts include increasing financial literacy for these target consumers and lowering the costs of distributing insurance. Blue Marble, which is a partnership of eight global insurance companies including Hamilton, AIG, Zurich, Aspen, XL Catlin, TransRe, Old Mutual, and Marsh & McLennan, is testing 10 microinsurance products that meet the needs of consumers and businesses in emerging markets.

## CONCLUSION

Climate change poses a significant threat to people and businesses in low-income countries. A new and innovative set of insurance products has emerged to address these threats and lower the long-

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term impact of natural disasters on individuals and businesses in these countries. Increasing the role of insurance depends on strong public policies. As the penetration of insurance rises, greater planning and emphasis on where houses are built, how water and power are supplied, and how people live will help increase resilience. The World Bank Group is just one of several international institutions helping to tailor innovative insurance approaches in emerging markets to help these countries respond to climate change. For these products to take off, however,

businesses and governments will need to create a foundation for well-functioning insurance markets. ■

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<sup>1</sup> E. Sebastian Kaderják, "Diminishing the economic impacts of natural disasters," Münster University International Model United Nations, March 2016.

<sup>2</sup> G. Von Peter, S. von Dahlen, and S. Saxena, "Unmitigated Disasters? New Evidence on the Macroeconomic cost of Natural Catastrophes," BIS Working Paper No. 394, 2012.

<sup>3</sup> Lloyd's Global Underinsurance Report, 2012.

<sup>4</sup> Bank of England, Staff Working Paper No. 603, "Let's Talk About The Weather: The Impact of Climate Change on Central Banks," May 2016.

<sup>5</sup> V. Stenek, J. Amado, and D. Greenall, "Enabling Environment for Private Sector Adaptation," IFC, 2013.

<sup>6</sup> A. Blomfield and J. Plummer, "The allocation and documentation of hydrological risk," *Hydropower & Dams*, Issue Five 2014.