

# **How insurance contributes to sustainable growth and development in emerging markets and China**

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## **Abstract**

China has undergone enormous transformation over the last 40 years. Gross domestic production (GDP) has increased very rapidly and today, GDP per capita is eight times what it was at the beginning of the millennium. Standards of living in China are much higher, and there has been a large reduction in poverty, with more than 800 million people lifted out of poverty since China initiated market reforms in 1978. The impact of very rapid economic growth has been felt far beyond China's borders, benefitting the entire Asia region and the world, including my home country Switzerland.

Currently, however, there is a slowdown in the global economy and there are some structural headwinds to continued strong growth in China. These include the need to redress some economic imbalances at home. My intention here is to demonstrate the value proposition of the global insurance and reinsurance industry, and how these can be leveraged to address future challenges to growth: both at home in China, and so that the global economy can continue to profit from your economic success.

Today sustainable economic growth is high up on governments' agendas. It is about taking a long-term development perspective, looking after the well-being of

citizens and the environment. Sustainable growth and development can only be realised when a society is resilient, in the sense of being able to withstand and recover swiftly from external shocks. The larger the capacity of the system to regenerate after a significant shock event, the smaller the resilience "gap" (ie, the more resilient the system is). At Swiss Re, we believe sustainability and resilience are two sides of the same coin and also hallmarks of international competitiveness.

China has shown remarkable progress in terms of sustainability and resilience in recent years. Examples include a swift recovery following the global financial crisis in 2008-09 and the country's ability to withstand various natural catastrophes and extreme climate events. Nevertheless, the increasing frequency and intensity of global shocks and disruptions remains a threat to a sustainable future. Further, with ongoing urbanisation and modernisation in China, the costs associated with shock events are getting ever higher. With economic growth, the nature of risks that China faces has changed, becoming more complex and systemically relevant. This requires ever higher standards of resilience if development in China is to remain sustainable. In this context, we believe insurance and reinsurance are natural partners for China.

In order to better leverage the capability of the industry for sustainable growth in China, we suggest the following:

- i. *Incorporate sustainability and resilience into national economic planning.* Improving resilience should be a shared goal, for China and all countries of the world. The G20 summit hosted by China in 2016 released guidelines on establishing a green finance system, in which re/insurers take a more active role in disaster prevention and

environmental protection. The challenge is to build on that success. One way could be to appoint a Chief Risk or Chief Resilience Office(r), with a remit to help local governments allocate sustainability and resilience resources more optimally.

- ii. *Make more use of private-public partnerships (PPP) to harness the full potential of insurance and reinsurance.* PPP can not only leverage the relative strengths of the public and private sectors, but also better integrate insurance solutions into regional government plans.
- iii. *Engage in regulatory innovation.* For example, establish infrastructure as a tradable asset class, which will be key for enabling the deployment of private capital into projects like those under the umbrella of China's Belt and Road Initiative. Swiss Re values opportunities to establish best practice pilot transaction with stakeholders like the Asian Infrastructure Investment Bank (AIIB), which could be the showcase for other Multilateral Development Banks (MDBs).
- iv. *Build an integrated risk management mechanism to tackle different types of risks.* In particular, establish an "enterprise risk management" process at different levels of society. The process should include risk identification, risk assessment, and risk mitigation, with the objective of viewing all exposures holistically and designing associated solutions.

## **I. Sustainability and resilience: new competitive advantages**

The Chinese economy has grown very rapidly over the past four decades. Government policy is now increasingly shifting from quantity to quality of growth.

This is manifested in, among others, a strong focus on innovation and industrial upgrading, as well as green development with increasing use of renewable energy sources.

While China has grown to become the second largest economy in the world, it remains vulnerable to external shocks. Currently attention is on the cyclical and structural challenges that will impact China's economic development in the coming years, and whether GDP growth can be maintained within a target 6-6.5% range. In our view, we should also be thinking about a longer term and more strategic view, one that takes sustainability and resilience into consideration.

#### **i. What are sustainability and resilience?**

*Sustainability* means being able to maintain changes in a balanced fashion. The process by which this goal is achieved is *sustainable development*, defined as "development that meets the needs of the present without compromising the ability of the future generations to meet their own needs".<sup>1</sup> A *sustainable society* is considered to be a society that has reached sustainability through this process.<sup>2</sup> The United Nations (UN) further enshrined the concept of sustainable development in the UN Millennium Declaration,<sup>3</sup> comprising of four systematic domains: economic, ecological, political and cultural.

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<sup>1</sup> *Our common future*, United Nations, World Commission on Environment and Development (WCED), 1987, <http://www.un-documents.net/wced-ocf.htm>

<sup>2</sup> *Sustainability and sustainable development*, Diesendorf, M., in Dunphy, D, Benveniste, J, Griffiths, A and Sutton, P (eds) *Sustainability: The corporate challenge of the 21st century*, chap. 2, 19-37, 2000, <http://markdiesendorf.com/wp-content/uploads/2015/09/CorpSust2000.pdf>

<sup>3</sup> *United Nations Millennium Declaration*, United Nations, 8<sup>th</sup> Plenary Meeting, 8 September 2000. <http://www.un.org/millennium/declaration/ares552e.htm>

*Resilience* means the capacity to recover quickly from difficulties.<sup>4</sup> In relation to the above four domains of sustainability, it is about the ability of an economy (or society) to withstand, recover and adapt to external shocks. Resilience is a dynamic process. For example, *economic resilience*<sup>5</sup> includes: (1) *instantaneous resilience*, which is the ability to limit the magnitude of immediate production losses and or asset losses, and (2) *dynamic resilience*, which is the ability to reconstruct and recover.<sup>6</sup> Resilience is central to sustainable development. It enables and protects the level of development achieved. It is also central to resolving challenges of capacity building, integral development and governance.

## **ii. Why are sustainability and resilience important?**

Swiss Re believes that today, and even more so in the future, the success of nations will be defined by a wider spectrum of factors than economic growth. Sustainability and resilience will be key competitive advantages, alongside considerations such as soft power, geopolitical influence and cultural heritage. The Cambridge Institute for Sustainability Leadership notes: "Natural hazards are not disasters in and of themselves. Whether or not they become disasters depends on the exposure of a community, and its vulnerability and resilience."<sup>7</sup> Increasingly, there are many examples of countries learning from past experience

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<sup>4</sup> *Resilience: definition*, Oxford Dictionaries, updated as of 25 January 2019.

<https://en.oxforddictionaries.com/definition/resilience>

<sup>5</sup> According to Swiss Re Institute's *sigma* 5/2018, economic resilience is defined as the capacity of a system to regenerate after a significant shock event.

<sup>6</sup> *Economic Resilience: Definition and Measurement*, Hallegatte and Stephane, World Bank Policy Research Working Paper, 2014,

<https://openknowledge.worldbank.org/handle/10986/18341>

<sup>7</sup> *Insurance Regulation for Sustainable Development: Protecting Human Rights against Climate Risk and Natural Hazards* Cambridge Institute for Sustainability Leadership, Cambridge, 2015, <https://www.cisl.cam.ac.uk/resources/publication-pdfs/insurance-regulation-report.pdf>

to strengthen national risk management and/or disaster prevention and relief, with significant positive benefits to society.

*a. Bangladesh: flood impact in 1970 vs. 2009*

Bangladesh is prone to catastrophic flooding. In 1970, Cyclone Bhola took between 300 000 and 500 000 lives. Since then, better preparedness – such as flood defences, early warning systems and community cyclone shelters – have dramatically reduced the loss-of-life impact of cyclones. For example there were around 3 000 casualties in Cyclone Sidr in 2007, and 190 deaths in Cyclone Aila in 2009. While cyclones vary in intensity and any loss of life is a disaster in itself, the reduced death count is testament to the country's improved resilience to natural disasters.

*b. Indonesia: Taper Tantrum 2013 vs. emerging market turmoil 2018*

Traditionally, the Indonesian rupiah has been seen as one of the more vulnerable currencies in the event of rising interest rates in the US. In 2013, during the "Taper Tantrum" when US Treasury yields surged, the currency was hard hit and depreciated by 26%. Five years on, however, performance was significantly better. When the US Federal Reserve raised interest rates last year, at its lowest point the rupiah was down 12%, and ended the year down just 6%. Economic growth slowed for two years following the 2013 Taper Tantrum, but growth accelerated in 2018. There are several reasons for the different outcomes but central were the improved credibility of Bank Indonesia, stronger macroeconomic fundamentals and better fiscal management and communication to investors. Economic

transformation is in itself an important example of resilience, beyond disaster management, preparedness and response.

*c. China flooding: 1998 vs. 2016*

The flooding in the summer of 1998 was considered one of the worst floods in Northern China in 40 years, affecting 180 million people. In July 2016, there was again extensive flooding along the Yangtze River basin, with extreme rainfall causing pluvial and river floods and landslides in 11 provinces. Since 1998, there has been massive investment in flood defences, which helped curtail the economic losses in 2016. With low penetration, however, insured losses from the 2016 floods were a mere USD 0.4 billion.

These examples demonstrate the benefits of resilience, and in particular highlight the progress made by some developing countries to better withstand ecological or financial shocks.

**iii. China's progress towards a sustainable and resilient society**

China's "Agenda 21" initiated by the United Nations in 1992, was the first major policy adopted by China on sustainable development. Since then, the country has since made significant strides towards a sustainable society.<sup>8</sup> However, despite impressive economic growth over the past decades, a comprehensive analysis of Chinese cities indicates that "the general sustainability of China is still at an average level" and that a lot still needs to be done to further build sustainable

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<sup>8</sup> *Recent Sustainability Performance in China: Strength-Weakness Analysis and Ranking of Provincial Cities*, Zheng, B. and Bedra, K.B, Sustainability 2018, 10, 3063, <https://www.mdpi.com/2071-1050/10/9/3063/pdf>

development.<sup>9</sup> The gaps are particularly prevalent in sectors such as environmental quality, where efforts are "rather recent", as it is a fairly new topic for the government. Lack of resilience is not a China-specific issue. It is a global problem, one that Swiss Re Institute says has probably gotten worse since the global financial crisis in 2008-09.<sup>10</sup>

### Global economic resilience: 10 years on

Ten years after the global financial crisis, economic resilience has not improved. Swiss Re Institute believes that measured by certain indicators such as debt-to-GDP ratios or global trend growth, the world economy's (including China) capacity to regenerate after a significant shock event is weaker today than it was in 2008-09.

**Table 1: Non-exhaustive list of factors that influence economic resilience**

Quantitative	Qualitative
Economic trend growth	Ease of doing business
Domestic and external imbalances	Institutional stability
Public and private debt stocks	Labour and product market flexibility
Scope for additional monetary policy/fiscal stimulus	Efficiency of insolvency regimes
Financial market structure	
Contingent liabilities, such as pension and healthcare costs	

Source: Swiss Re Institute

Significantly, global debt ratios are much higher than 10 years ago, standing at 318% (or USD 247 trillion in absolute terms) in the first quarter of 2018,

<sup>9</sup> Zheng, B. and Bedra, K.B, op. cite.

<sup>10</sup> *sigma* 5/2018: Global economic and insurance outlook 2020



compared with 282% in the first quarter of 2008.<sup>11</sup> In particular, government debt levels have increased across the globe. At the same time, economic trend growth, which could help countries reduce their debt levels, has declined significantly. According to some estimates, the growth trend has decreased from around 5% in 2006 to just over 3% in 2018.<sup>12</sup>

To strengthen global resilience, policy makers should focus on multiple dimensions, Swiss Re Institute says. Structural reforms, stopping and reversing tendencies towards trade protectionism, upskilling the long-term unemployed labour force and reforming unemployment insurance would help. In addition, efforts to rationalise social security provisions in light of aging populations, further progress towards a common taxonomy on sustainable finance, and establishing a consistent risk-based regulatory framework for Environmental, Social and Governance (ESG) investments are also important steps to improve resilience.

## **II. A challenging outlook for emerging markets and China**

Emerging market growth has moderated in recent years as some economies have matured and become more exposed to external cyclical factors. However, the overall emerging market growth story remains positive. Current headwinds facing emerging economies include slowdown and transition from quantitative easing to tightening in the advanced markets. Trade-related uncertainty and financial volatility further cloud the outlook. Nevertheless, we expect that the seven largest

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<sup>11</sup> *Global Debt Monitor* database of the IIF, <https://www.iif.com/Research/Capital-Flows-and-Debt/Global-Debt-Monitor>

<sup>12</sup> *Assessing Global Potential Output Growth*, P. Alexander, Bank of Canada Staff Analytical, 2017, <https://www.bankofcanada.ca/wp-content/uploads/2017/04/san2017-3.pdf>

emerging markets will contribute up to 42% of global growth over the next decade, and China alone 27%.

The path to achieve sustainable growth and improve resilience also hinges on the type and severity of cyclical and structural challenges faced by an economy. Cyclical headwinds mean there could be multiple shocks at short intervals, while structural impediments are major constraints to sustainable development. China's prospects are mixed. It is both a leading but also an emerging economy, that is transitioning from one economic development path to another. We see the following structural issues being most relevant with respect to China's resilience in the future.

**Ageing:** China is going to age extremely rapidly over the next decade, at four times the speed Europe aged in the last century. To tackle this demographic issue, the Chinese government abandoned its one-child policy in 2015. However, the current low birth rate cannot easily be reversed.<sup>13</sup>

**Trade dependence:** Trade and investment contributed enormously to China's economic development over the past decades. The contribution of domestic consumption to GDP has increased recently, but with ongoing market liberalisation and the country's further integration into the global economy, China will remain dependent on international trade (both goods and services) in the foreseeable future.

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<sup>13</sup> After initially accelerating in 2016, when we saw the highest birth rate this century, both the absolute number of new-born babies and the birth rate fell in 2017. Births are also expected to decline in 2018 as the number of women of fertile age continues to shrink.

**Productivity growth:** From a longer term perspective, China's main policy responses to the slowdown in productivity growth have been innovation and openness, while fostering new strategic industries.<sup>14</sup> R&D spending in China continues to grow, as do the number of businesses in the national technology incubator and the value of strategic industries as a percent of GDP.

**Financial volatility:** As China further liberalises its financial system, it will become increasingly vulnerable to volatilities in the international capital markets. The central bank has recently been working to strengthen the effectiveness of monetary policy. Improving financial resilience will remain a top policy issue.

**Indebtedness:** Corporate sector debt expanded significantly after the global financial crisis. The total non-financial debt-to-GDP ratio increased sharply from less than 150% at year-end 2008 to a peak of about 260% in the first quarter of 2018. In spite of deleveraging measures including a tightening of financial regulations since 2016, the issue remains at the top of the government's agenda.<sup>15</sup>

### **i. Beyond economic growth – a complex risk landscape**

A purely numerical assessment is informative, but incomplete. Recognising this, the World Economic Forum has long been calling for countries to move beyond GDP when assessing the sustainability of growth, calling for a broader set of measures to be included. At the same time, a more holistic approach to risk management is warranted. Risks facing modern societies are multi-faceted and evolving. For example, in its *Global Risk Outlook*

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<sup>14</sup> Initiated in 2015, "Made in China 2025" is a multi-stage roadmap to upgrade and consolidate China's manufacturing industry for improvements in total factor productivity over a 10-year period.

<sup>15</sup> BIS data, updated as of 19 October 2018.

for 2017, the Cambridge Centre for Risk Studies traced the crises that 300 major cities faced over the past 50 years. The list is long as well as alarming.<sup>16</sup>

- The major cities together have lost more than 1 million of their citizens to earthquakes in the last 50 years.<sup>17</sup>
- Cities have been involved in more than 50 wars, with more than a dozen bombed to ruins.
- Half of the cities have suffered serious flooding, and a quarter have been flooded more than five times.
- City centres have been targeted in more than 1 000 terrorist car bomb attacks.
- City centres have seen political instability through riots, protests and social unrest.
- The cities have been embroiled in over a dozen civil wars.
- 32 cities have had to cope with a volcanic eruption less than 100 km away.
- City centres have had to combat the outbreak of a previously unknown disease five times.
- And city centres have experienced thousands of cyberattacks.

Other research provides additional evidence of a changing risk landscape and the challenges facing global society. These include, for instance, changes in biosphere integrity, deforestation, ocean acidification, and an increasing presence of novel

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<sup>16</sup> *Global Risk Outlook for 2017*, Cambridge Centre for Risk Studies, University of Cambridge, 2016, [https://www.jbs.cam.ac.uk/fileadmin/user\\_upload/research/centres/risk/downloads/crs-cambridge-global-risk-index-2017.pdf](https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/risk/downloads/crs-cambridge-global-risk-index-2017.pdf)

<sup>17</sup> It is not the tremor that kills people in an earthquake but the buildings, routinely constructed using faulty designs. About 403 million people live in cities that face significant seismic hazard, according to a recent study by seismologist Roger Bilham, of the University of Colorado: <http://www.seattletimes.com/nation-world/urban-areas-earthquakes-a-lethal-combination/>

entities like organic pollutants and micro-plastics. In the face of these imminent risks, many cities (including in China) have much to do to be fully prepared. For example, the financial implications of climate change on sustainable growth can be devastating, and typhoons, flooding, snow storms and drought can lead to major disruptions in business operations and a heavy burden on public finances. The reasons for unpreparedness are various, including a lack of risk awareness of how severe and frequent climate change risks are; the absence of appropriate government policies and action plans to tackle climate change; urban planning and environmental regulations that have not been adjusted to manage climate change; slow response to climate disasters due to lack of capacity and resources; and lack of public awareness of climate variability and climate change-induced hazard mitigation. Inertia is not an option, however. We believe that with increasing complexity of risks, it is incumbent on global society to do more to foster sustainable growth and improve resilience.

### **III. Insurance can help China become more resilient**

China has seen gradual improvement in sustainability over the past decade. For instance, the latest *Urban Sustainability Index Report* shows that improvement in healthcare coverage and also government investment have significantly improved the social and economic resilience of major cities, particularly in the eastern city clusters.<sup>18</sup> Yet, improving resilience will remain a key challenge, for China and many other emerging markets. A whole suite of tools can be leveraged, and a long list of actions implemented, including environmental and natural resource

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<sup>18</sup> 2016 *Urban Sustainability Index (USI) Report*, Press Release, Urban China Initiative, April 2017. [http://www.urbanchinainitiative.org/en/content/details\\_19\\_62344.html](http://www.urbanchinainitiative.org/en/content/details_19_62344.html)

management, sustainable livelihood, social protection and planning regimes. Among all these, insurance and reinsurance can make a significant contribution.

A raison d'être of insurance is sustainability and resilience. Insurance is a long-term business, and the value proposition is as a risk absorber through paying claims, thus supporting recovery.<sup>19</sup> Reflecting this, the *Principles for Sustainable Insurance* were developed by UNEP FI and launched at the 2012 UN Conference on Sustainable Development, and endorsed by the UN Secretary-General.<sup>20</sup> The Principles list how societies can harness insurance for sustainable development, through the industry's triple role as risk manager, risk carrier and investor. As stated by then UN Secretary-General Ban Ki-moon, "the Principles for Sustainable Insurance provide a global roadmap to develop and expand the innovative risk management and insurance solutions that we need to promote renewable energy, clean water, food security, sustainable cities and disaster-resilient communities."<sup>21</sup>

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<sup>19</sup> It should be noted that the ICPs from IAIS do not explicitly recognise nor align to sustainable development, but this does not mean insurance cannot contribute to sustainable development. It seems so far there is no common global framework for the routine and systemic integration of sustainable development issues into insurance regulation.

<sup>20</sup> *Harnessing insurance for sustainable development*, PSI meeting with Finance Norway, 20 November 2015.

<https://www.finansnorge.no/contentassets/ecedd0f4f8a047208e6429d471bb963a/butch-bacanis-presentasjon.pdf>

<sup>21</sup> PSI meeting with Finance Norway, op. cit.

**Table 2: Ways in which insurers can contribute to sustainable development and resilience**

<b>As risk managers</b>
<ul style="list-style-type: none"><li>• Research on health, disaster risk reduction and climate change adaptation and mitigation</li><li>• Catastrophe risk analysis and models that integrate natural ecosystems, climate change and socio-economic vulnerability factors</li><li>• Risk management processes and insurance underwriting guidelines that promote better health, disaster risk reduction and climate change adaptation and mitigation</li><li>• Literacy programmes on health, climate and disaster risks and insurance</li><li>• Programmes that improve disaster awareness and preparedness in communities</li><li>• Risk management tools for clients and suppliers to reduce climate and disaster risk</li></ul>
<b>As risk carriers</b>
<ul style="list-style-type: none"><li>• Insurance for:<ul style="list-style-type: none"><li>○ low-income people, people with disabilities, people with HIV/AIDS, ageing populations</li><li>○ climate risks and natural hazards</li><li>○ renewables, green buildings, zero and low-emission transportation, energy efficiency</li><li>○ sustainable agriculture and forestry</li><li>○ environmental pollution liabilities</li></ul></li><li>• Insurance based on usage (eg, pay-as-you-drive, pay-how-you-drive)</li></ul>
<b>As institutional investors</b>
<ul style="list-style-type: none"><li>• Investment in:<ul style="list-style-type: none"><li>○ inclusive finance, healthcare</li><li>○ climate and disaster-resilient infrastructure</li><li>○ sustainable agriculture and forestry</li><li>○ renewables, green buildings, zero and low-emission transportation</li><li>○ sustainable water management, sustainable waste management</li></ul></li></ul>

Source: *Harnessing insurance for sustainable development*, PSI meeting with Finance Norway, 2015, UNEP Finance Initiative.

With their know-how and expertise in risk assessment, insurers can play a central role in supporting sustainable development. For example, already today insurers are involved in the settlement of almost all kind of environmental losses and have deep understanding of the drivers of those losses. They also have significant

know-how in risk management and in providing guidance on risk mitigation/loss prevention. And of late, many insurers have been at the forefront of leveraging new technologies to improve risk assessment, mitigation and transfer. The efficiency gains from these technologies will go a long way to supporting sustainable growth.

Insurers play a traditional role in enabling economic growth, but they can also play an important role in the "new normal" economic development of China.<sup>22</sup> Globally, there is a growing range of initiatives to better harness insurance for sustainable development (see Table 3 below). Insurers have already started to help China's path towards sustainable growth. A few examples highlight where progress is being made.<sup>23</sup>

### **Rural and urban resilience**

China has a strategic plan to develop its urban centres and agriculture zones. Many of these are in areas with high vulnerability to natural catastrophes, such as earthquakes or typhoons. Inability to recover swiftly from extreme weather or geological events can set local communities back by years. Of late, insurers have developed pioneering models that make use of indices like cyclone wind speed or rainfall amounts to provide cover for associated exposures that can trigger policy claims. These parametric solutions enable insurers to process payouts faster than before, as there is no need for the lengthy damage assessments characteristic of

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<sup>22</sup> *Theme: insurers' role in sustainable economic growth*, Association of British Insurers, 2015. <https://www.abi.org.uk/globalassets/sitecore/files/documents/publications/public/2015/a-brave-new-world/trend-8.pdf>

<sup>23</sup> Adopted from *Insurance-China's path to advancing a clean energy future, food security and city resilience*, Jayne Plunkett, CEO Reinsurance Asia, Swiss Re, 2017. [https://www.swissre.com/china/wef\\_agendab\\_blog\\_china\\_2017.html](https://www.swissre.com/china/wef_agendab_blog_china_2017.html)



more traditional insurance schemes. The near-immediate reimbursement of payouts will be important in supporting local government disaster relief and reconstruction efforts, and improve the resilience of the local economy.

Swiss Re has participated in four such schemes, in rural Heilongjiang and Shaanxi provinces, urban Guangdong, and in Mao County in Sichuan. In all cases local government rather than households and enterprises are insured. Swiss Re has also partnered with a Chinese insurer to launch the country's first mobile-enabled typhoon property parametric insurance solution in eight coastal provinces in Southeast China, including Guangdong, Zhejiang, Fujian and Shanghai. It provides real-time tracking of typhoon paths and automated claims to different users including households and businesses, and thus helps accelerate economic recovery after natural disasters.

### **The Mao county scheme**

Mao County is close to the epicentre of the devastating Wenchuan earthquake of 2008. The local programme was implemented in late 2018, ten years after the earthquake. It is the first-ever natural catastrophe programme at county level in China. It provides the government of Mao County with comprehensive parametric insurance protection against losses from natural disasters including earthquakes, landslides, heavy rainfall and public safety accidents.

**Table 3: Key actions globally taken to harness insurance for sustainable development**

	Cross-cutting	Risk	Access	Investment
<b>Corporate Actions</b>	Principles-driven commitments (Brazil's CNSeg)	Sharing data and information (Finance Norway)	Product innovations (Index Insurance)	Portfolio analysis and disclosure (Montreal Carbon Pledge)
	Sustainability Risk Management Frameworks (Swiss Re, Allianz)	Direct risk resilience support (Swiss Re)	Distribution and Deployment (Mobile technology)	Investment frameworks and funding commitments (Axa)
<b>Multi-stakeholder Actions</b>	Policy-oriented partnerships (Australian Business Roundtable, P4A)	Partnerships for risk assessment: sharing capabilities and knowledge (1-in-100 Initiative)	Partnerships for access: engagement, capacity building, and implementation (A2II, IIF, GIIIF)	Partnerships to develop project pipelines (GreenInvest)
<b>Actions</b>	Regional insurance facilities and partnerships (African Risk Capacity)	Mandatory coverage approaches (China)	Policy-directed market provision (India)	Solvency regulations, Capital requirements, and Tax incentives (EU)
	Insurance development roadmaps Frameworks for risk prevention	Mandatory Risk assessment and disclosure (US, UK)	Support for market development (Philippines) Public finance for access (G7)	

Source: *Insurance 2030, Harnessing Insurance for Sustainable Development*, UNEP Inquiry Working Paper 15/01, June 2015

The public and the private sectors have a shared interest in a solid and resilient macroeconomic backdrop. To strengthen and improve global resilience, policy makers should focus on multiple dimensions. The table below shows some of the key areas where we see significant room for improvement.

**Table 4: Our "wish list" to strengthen economic resilience**

Topic	Description
Encourage private capital market solutions	The private sector should play a bigger role in alleviating societal challenges and government contingent liabilities, for example by providing solutions to address the global retirement savings gap or public healthcare expenditures.
State contingent instruments for sovereigns	Given the global debt overhang, decrease the tax advantage of debt over equity as a corporate and government financing instrument. Encourage state-contingent instruments <sup>24</sup> such as GDP-linked sovereign bonds that act as a counter-cyclical stabiliser, as the size of coupon payments are dependent on the economic cycle, reduced or even eliminated during cyclical downturns but increased during booms. Address implicit public sector contingent liabilities.
More regulatory sandboxes and investment in data and research	Foster regulatory sandboxes to allow firms a safe-space for innovation. Invest in data and research to support evidence-based impact studies of public policies. Invest in new technologies, such as Blockchain to facilitate more technologically driven, deep and open domestic capital markets.
Leverage Multilateral Development Banks' (MDB) balance sheets	Pool individual infrastructure projects and diversify the risk across the development finance system of MDBs. This can be done through first-loss guarantees and co-investments with the private sector. Such an approach would also free up MDB balance sheets.
Encourage sustainable investing	Further progress towards a common taxonomy on sustainable finance. Establish a market consistent regulatory framework for Environmental, Social and Governance (ESG) investments. Increase importance of ESG in financial analysis.
Introduce a tradable infrastructure asset class	Address the very large infrastructure financing gap and relieve the burden on governments' budgets by mobilising the significant asset base of long-term investors. For this, hurdles need to be lowered: standardisation of project disclosure and related documentation is key.
More Public Private Partnerships (PPP)	PPPs lead to efficiency gains, more effective risk-sharing and reduce pressures on government budgets. Harmonised dispute resolution mechanisms with clear arbitration rules are needed.
Structural reform agenda	Reform agendas are country-specific. These include upskilling the long-term unemployed labour force or reforming unemployment insurance.

Source: *sigma* 5/2018, Global economic and insurance outlook 2020, Swiss Re Institute

## Driving a clean energy future

<sup>24</sup> See also *State-contingent debt instruments for sovereigns*, IMF Policy Paper, May 2017

Climate resilience is also about controlling emissions. China is already the world leader when it comes to electricity production from renewable energy sources. However, energy flows from wind and the sun can be volatile, and attracting investors to renewable energy projects will be dependent on the predictability of revenue streams. By complementing traditional covers during construction and operation, companies like Swiss Re offer additional protection with index-triggered insurance solutions, similar to those for Heilongjiang and Guangdong mentioned above. With these new reinsurance protections, operators and investors receive steady revenues in case of wind or solar resource volatility, meaning they can concentrate on growing their business while maintaining a more stable cash flow.

### **Insurance as an enabler for clean energy**

As renewable manufacturing has grown, the costs of renewable energy technologies have dropped notably. Innovation has helped, but the main driver of reduced costs has been market expansion. While this is a positive development, China's scale will significantly magnify the systematic risk exposure. This cannot be ignored and is a critical consideration when it comes to project insurance. The cover needs to be long-term in scope, from project commencement to completion of all construction activities. Here insurance shows its value by minimising risks for investors along the value chain, assuring them that cash flows are steady even if disaster strikes during construction or operation. At the same time, insurers are encouraging best practice, for example in smart city development, through a common method of assessing and mitigating potential risks.

## **IV. Policy implications**

The challenge facing China is to maintain stable economic growth and also improvements in quality of life. Progress has been made, but there are areas of protection gap. An example is the rapid extension of social health insurance cover, but still large underinsurance in health. Swiss Re Institute estimates that China has the largest health protection gap (USD 805 billion) in Asia, driven by its large population, high out-of-pocket health expenses and low insurance penetration.<sup>25</sup>

Swiss Re proposes the following to help build sustainability and resilience in China.

#### **i. Incorporate sustainability and resilience into national economic planning**

There is broad consensus that development should not be assessed in terms of GDP growth alone, but on a broader spectrum of variables. Maintaining sustainability and improving resilience could be explicitly integrated into the development agenda of national/provincial/prefectural government plans. We see encouraging signs: for example, the magnitude 8.0 earthquake that hit Sichuan in 2008 has generated intense discussion on incorporating preventive disaster management and emergency responses into regional government development plans.<sup>26</sup>

Urbanisation has increased exposure to different risks due to higher concentration of assets and changes in lifestyle. The large metropolitan cities in China raise new challenges around the sustainability of government, business and households in

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<sup>25</sup> *Closing Asia's USD 1.8 trillion health protection gap*, Swiss Re Institute, October 2018, <https://www.swissre.com/institute/research/topics-and-risk-dialogues/insurance-markets-and-risk-management/Closing-Asia-s-USD-1.8-trillion-health-protection-gap.html>

<sup>26</sup> A recent example is Swiss Re having become the exclusive reinsurer to a new cat insurance at the county-level in China, by offering protection to the Mao County in Sichuan.

terms of finance and operations. Less developed regions are more vulnerable to external shocks given weak infrastructure and pressure on funding.

One option to improve the central government's capacity to deal with sustainability and resilience is to establish a country Chief Risk Office (CRO) or Chief Resilience Office(r), which can help local authorities allocate resources more optimally, including with a view to potential synergies. For instance, with better coordination across different levels of government departments, multiple resilience goals could be achieved through one project. An example could be a flood barrier that also serves as a cycling path, thereby safeguarding cities against storm surge while promoting a healthy lifestyle. An effective CRO would help local populations manage their own circumstances, deliver more impactful resilience efforts and collaborate externally to identify and integrate lessons from neighbouring counties and districts.

### **New energy development**

To foster sustainable development, renewable energy is at the heart of China's strategic planning. Under the 13th Five-Year Plan, the government plans to almost double onshore wind capacity and triple solar PV by 2020.<sup>27</sup> To construct and run complex offshore facilities, insurance is needed. The risk bearing capacity and risk management knowledge of insurers are instrumental in making such projects to happen. Swiss Re Corporate Solutions (CorSo) for example, has supported the Chinese new energy sector with insurance cover and also with expert sector

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<sup>27</sup> *Next Generation Wind and Solar Power – From cost to value*, OECD/IEA, 2016, <http://www.oecd.org/publications/next-generation-wind-and-solar-power-9789264258969-en.htm>

knowledge. CorSo provided CNY 2.5 billion capital to cover offshore wind exposures in 2018, and projects that this will increase to CNY 4.5 billion in 2019.

## **ii. Leverage private-public partnerships (PPP) to harness the full potential of insurance**

Risk-mitigation infrastructure makes societies more resilient to increasingly frequent and damaging natural disasters. Research has shown that investments in infrastructure such as sea walls, bridges and durable roads can raise potential output by 3-11%, with an annual growth-dividend of 0.1-0.4%.<sup>28</sup> A recent study examined the risk exposure of 616 major metropolitan areas to five major perils: earthquakes, storms, storm surges, tsunamis and river floods.<sup>29</sup> Earthquakes are among the most devastating catastrophes to hit populated areas on a regular basis. In many emerging markets, victims seldom receive sufficient compensation from either the insurance industry or the government. The Taiwan Nantou (Chi-Chi) Earthquake in 1999, for example, resulted in significant economic losses of USD 14.1 billion, but insurance payouts were only USD 1 billion. And the earthquake of magnitude  $M_w$  7.8 that hit Nepal in April 2015 resulted in casualties of close to 9 000 and an estimated total loss of USD 6 billion, mostly uninsured. Traditional insurance in these cases did not provide anything close to adequate protection.

Governments have started to introduce earthquake pools to better manage earthquake risk, promote insurance penetration and encourage the construction of earthquake-resistant structures. Risk mitigation is also achieved by means of

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<sup>28</sup> *Mind the risk, a global ranking of cities under threat from natural disasters*, Swiss Re, 2014, [https://media.swissre.com/documents/Swiss\\_Re\\_Mind\\_the\\_risk.pdf](https://media.swissre.com/documents/Swiss_Re_Mind_the_risk.pdf)

<sup>29</sup> *Building Resilience to Natural Disasters in the Caribbean Requires Greater Preparedness*, IMF, 10 December 2018. <https://www.imf.org/en/News/Articles/2018/12/07/NA120718-Building-Resilience-to-Natural-Disasters-in-Caribbean-Requires-Greater-Preparedness>

reinsurance on the international market. For example, in partnership agreement Swiss Re and Veolia work with 100 "Resilient Cities" across the world, including Deyang and Huangshi in China, to understand the risk exposure of critical assets under current and future climate scenarios.<sup>30</sup> Based on these assessments, cities can develop resilience plans to lessen the risk of the assets being affected and reduce exposures. These examples demonstrate that public-private cooperation can be leveraged to achieve better risk financing than reliance on government post-disaster relief efforts alone.

The use of PPPs to help countries absorb the financial consequences of catastrophic events improves resilience. Governments can encourage risk transfer, for example, by setting rules and regulations that enable the insurance sector to absorb large losses. These can include compulsory insurance schemes to create a sufficiently large "risk community", or measures to better define liabilities and improve access to international re/insurance markets. Re/insurers can play an advisory role in a city's planning process, as well as be absorbers of risk. They have global technical expertise in geophysical hazards and disaster risks, and can help governments be more effective in city risk mitigation and planning. In addition, risk financing mechanisms can be developed through PPPs to bridge the funding gap.

### **iii. Regulatory innovation**

As long-term investors, insurers have strong interests in projects such as infrastructure. However, these projects remain hard to access from an investment

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<sup>30</sup> *Swiss Re and Veolia to partner on speeding up disaster recovery*, Davos, 22 January 2016. [https://www.swissre.com/media/news-releases/2016/swiss\\_re\\_and\\_veolia\\_to\\_partner\\_on\\_speeding\\_up\\_disaster\\_recovery.html](https://www.swissre.com/media/news-releases/2016/swiss_re_and_veolia_to_partner_on_speeding_up_disaster_recovery.html)



point of view. There is a lack of investment process standardisation, a slow project pipeline, weak investor rights, and still punitive capital charges that hinder infrastructure investments. One step forward could be universal application of a template for infrastructure debt documentation and disclosure requirements, something similar to the European Financial Services Roundtable template.<sup>31</sup> Ideally, best practice infrastructure debt model transactions from highly rated entities and/or multilateral organisations would guide markets and help establish a tradable asset class. This would facilitate deployment of private capital into the Belt and Road Initiative. Swiss Re values opportunities to establish best practice pilot transaction together with multilateral organisations such as with the AIIB.

In addition, regulatory innovation is needed to support development of insurance products that facilitate transition to a low-emission and resource-efficient economy. This includes better integration of ESG risks and opportunities into insurance regulations. The past years have seen a noted shift in how regulators and supervisory institutions deal with sustainability and resilience issues. An increasing number of authorities are taking a more proactive and supportive approach. For instance, the France Energy Transition Law passed in 2015 requires entities to disclose their policies related to ESG investments and information on their risk management of climate change consequences.<sup>32</sup> In China, authorities have approached sustainability through different means, including mandatory requirements for environmental pollution liability insurance, especially for firms

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<sup>31</sup> The template is available at <http://www.efr.be/documents/news/86.02.03.2015%20EFR%20Expanded%20on%20Infrastructure%202015.pdf>

<sup>32</sup> *Sustainable Insurance: the Emerging Agenda for Supervisors and Regulators*, Sustainable Insurance Forum, August 2017. [https://www.unepfi.org/psi/wp-content/uploads/2017/08/Sustainable\\_Insurance\\_The\\_Emerging\\_Agenda.pdf](https://www.unepfi.org/psi/wp-content/uploads/2017/08/Sustainable_Insurance_The_Emerging_Agenda.pdf)

in high polluting sectors. The 2016 G20 summit released guidelines on establishing a green finance system, calling on re/insurers take a more active role in disaster prevention and environmental protection.

Green insurance is another market-based risk management mechanism which could play a proactive role in preventing and transferring environmental pollution risks and offering loss compensation.<sup>33</sup> As a market-based risk management mechanism, insurance can partially transfer the risk of environmental pollution and share the responsibilities of damages. A national compulsory green insurance system can ensure timely compensation for pollution cases. Compulsory liability insurance can also reveal future provisional environmental costs through pricing and encourage insurers to review loss ratios, helping prevent excessive investment in polluting projects.

#### **iv. Build an integrated risk management system**

Modern risk management relies on integrated risk assessment, which takes a portfolio view of risks and includes all risk categories and interdependencies – including technical, economic, natural and social risks. For the US Environmental Protection Agency and other overseas agencies, risk assessment has become the cornerstone of regulatory decision making.

In business, a risk management department and/or process involving risk identification, assessment and mitigation is standard practice. At the city level, an integrated risk management plan would manage social, economic, and

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<sup>33</sup> *China Green Finance Task Force Report: Green Insurance*, United Nations, April 2015.  
<http://unepinquiry.org/publication/china-green-insurance/>

environmental pressures. The following are examples of some actions that city authorities could take to address mitigation, adaptation and development needs holistically:

- a. Improve water supply pipeline infrastructure to reduce leaks and loss of water supply, and in turn increase access of basic services to all, including the poor.
- b. Launch a coastal and marine conservation project to protect cities from storm surges and maintain a healthy coastal ecosystem (especially for coastal cities in Southeast China).
- c. Implement an urban agriculture programme, to reduce the costs of supply products to cities and the level of fertiliser and pesticide usage. The programme would also create new jobs.

## **V. Conclusion**

Before the year 2000, the insurance industry spent little time thinking about sustainability and resilience issues. Microinsurance and poverty-relief were not part of regular insurance vocabulary. Ageing populations were not a global issue. Index-based and usage-based insurance, insurance for people with HIV/AIDS, and insurance for renewable energies and green buildings were virtually non-existent.

Since 2000, however, a stream of initiatives demonstrate what has become a growing commitment on the part of the industry to address sustainable development challenges, particularly in the areas of natural catastrophes and

disaster risk reduction, access to microinsurance and support for the disadvantaged:<sup>34</sup>

- Consultative Group to Assist the Poor (CGAP) Working Group on Microinsurance (2002)
- Chief Risk Officers Forum Emerging Risks Initiative (2005)
- Microinsurance Innovation Facility (2008)
- Microinsurance Network (2009)
- Access to Insurance Initiative (2009)
- Kyoto Statement of The Geneva Association (2009)
- The Global Insurance Industry Statement: “Adapting to climate change in developing countries” (2010) of ClimateWise, MCII, Geneva Association and UNEP FI
- UNEP FI Principles for Sustainable Insurance (PSI) (2012)
- The Climate Risk Statement of The Geneva Association (2014)
- ILO Impact Insurance Facility (2014)
- PSI Statement: “United for disaster resilience: The insurance industry’s statement in support of disaster risk reduction” (2015)
- G7 Initiative on Climate Risk Insurance (2015)

Reinsurers and insurers are pushing the boundaries of insurability and making access to cover available to a larger section of the population. The recent increased use of digital technology by insurers to improve insurability and penetration is an example of this. Another is the increasing use of index-based

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<sup>34</sup> *Principles for sustainable insurance*, UNEP, June 2015.

[https://www.unepfi.org/psi/wp-content/uploads/2015/10/Insurance\\_2030\\_FINAL6Oct2015.pdf](https://www.unepfi.org/psi/wp-content/uploads/2015/10/Insurance_2030_FINAL6Oct2015.pdf)

insurance solutions. It is in China's interest to engage the industry in further discussion on innovative ways to broaden the reach of insurance across society. Resilience and sustainability will be key drivers of China's long-term development, particularly as the risk landscape becomes ever more complex. Fostering risk management expertise and effective insurance solutions will facilitate China's growth: growth and development that is both sustainable and inclusive of more people.

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