

Exploring and shaping the risk landscape

We engage in regular dialogue with our stakeholders. By sharing expertise and know-how, we help society to develop effective responses to key risks.

With our re/insurance solutions we help our clients and partners to cope with the risks they face. This helps to create stability and enables economic growth. But many of today's risks are complex and may threaten sustainable progress. To find effective, long-term responses to such risks, partners from the public and the private sector need to work together.

This is why we attach great importance to ongoing dialogue with our stakeholders. Using the expertise from our core business, we identify key risk topics and take an active role in discussions on them. We share and exchange knowledge through many channels, eg our renowned publications including the *sigma* series, international dialogue platforms, events at our Centre for Global Dialogue, and cooperation with governments and academic institutions. Through this ongoing dialogue, our stakeholders give us valuable feedback and new insights for our risk management and product development.

Group Issue Management

With Group Issue Management (GIM), we have a formal process to identify topics that are strategically important to us, our clients and society at large. These Top Topics denote the global challenges we want to help address and set an important focus for our stakeholder dialogue.

The GIM process involves our risk specialists, product experts and other professionals from across the Group. We share their risk expertise and solutions with key stakeholders, ie clients, investors, regulators, policy makers, academics and civil society groups. Through our Top Topics dialogue, we also aim to help shape public policy in a way that facilitates the development of effective responses to the issues identified.

We periodically review our Top Topics portfolio to reflect new business developments and shifting global agendas. Following an extensive review in 2012, we adopted a revised set of five Top Topics for our stakeholder dialogue:

- Advancing sustainable energy solutions
- Funding longer lives
- Managing climate and natural disaster risk
- Partnering for food security
- Supporting financial stability

In 2014, we again worked on these Top Topics with many partners from the public and private sectors. In the following sections we provide a brief introduction to each topic, explain why we consider it to be important and give examples of our activities:

Advancing sustainable energy solutions

Sustainable energy sources are essential to combat global warming. Reducing greenhouse gas emissions while, at the same time, satisfying the energy needs of a growing population, will be one of the great challenges we face in the coming decades. Sustainable energy projects continue to increase in scale and complexity, as do the risks associated with them.

Innovative risk transfer solutions help to drive investment in the sector by reducing risk for investors. Building on our long-standing commitment to sustainability, we have recently intensified our renewable energy research to help our clients and the global community to develop and establish secure energy supplies for the future.

Our notable achievements in 2014:

- Together with the World Energy Council, we launched the three-year research project "Financing resilient energy infrastructure" (FREI) to identify and characterise the nature, frequency and severity of emerging risks in renewable energy installations. Its results will help to make energy infrastructure more reliable and thus encourage investment in the sector;
- As a founding member, we launched the RE100 initiative with several partner companies, setting ourselves the goal of obtaining 100% of our energy from renewable sources. By increasing demand, this initiative will make it more viable for power companies to build renewable energy plants (for more details, see page 46);
- We extended Swiss Re Corporate Solutions' partnership with Solar Impulse on the world's first round-the-world flight with a solar-powered airplane, underscoring our commitment to supporting cutting-edge innovations in the field of sustainability.

Funding longer lives

People are living longer today than ever before, but the share of the working population is shrinking. As a result of this demographic megatrend, the costs of funding retirement income, healthcare and long-term care in old age are increasing dramatically. This could have significant financial consequences for individuals, insurers, employer pension funds and society in general. Public-private partnerships are needed to overcome this challenge.

Life and health reinsurance is part of our core business, and we are the world's largest reinsurer of mortality risk. Consequently, we are a natural home for the longevity and health risks associated with ageing societies, and have the financial strength to take on risks across a person's whole lifespan. Our in-depth research and development in the life and health area combines medical, demographic, social, behavioural and financial expertise to deliver unique insights into the implications of funding longer lives. Our global presence and deep understanding of different demographic needs throughout the world allow us to adapt and develop innovative solutions in new markets.

Our notable achievements in 2014:

- We continued our involvement in Asia Health Symposia, which is an information-sharing platform to gather a cross-section of key stakeholders. Spin-off task-force groups maintained dialogue on key health issues identified;
- Our senior management were engaged as keynote speakers at various US and Canadian industry conferences on "funding longer lives";
- We contributed several articles and interviews on "funding longer lives" topics to different media.



For more information see
swissre.com/rethinking/sustainable_energy/



For more information see
swissre.com/rethinking/longer_lives/

Managing climate and natural disaster risk

Losses from floods, storms, earthquakes and other natural catastrophes (nat cat) can have a dramatic impact on the citizens and economies of entire countries. Insurance helps people, businesses and societies to get back on their feet after disaster strikes.

Although insured losses from natural catastrophes were lower in 2014 than in recent years, the number of events was among the highest ever recorded. The expectation is that, as a result of climate change, extreme weather events like hurricanes and floods will increase. Moreover, the economic losses from such events are also expected to rise given a higher concentration of assets in exposed areas. If no action is taken, climate change could cost the world economy an estimated 20% of global GDP by the end of this century.

By financing measures to mitigate disaster risks and adapt to climate change, we can strengthen the resilience of businesses, local and national economies, and societies. As insurance puts a price tag on risk, it helps to create an incentive to invest in prevention measures.

As a result of increased insurance penetration, losses from natural catastrophes are expected to rise. Understanding natural catastrophe risks and the impact of climate change is critical to cost Swiss Re's business accurately and to structure sound alternative risk transfer solutions. By sharing this knowledge, we help our partners to identify cost-effective measures to protect themselves. In addition, we provide solutions to cover the residual risk that cannot be avoided.

Our notable achievements in 2014:

- We continued to share our data on the potential impact of major nat cat events on cities. Following on from the publication "Mind the risk: a global ranking of cities under threat from natural disasters", we launched our "Risky cities" publication series in 2014, which provided more detailed data for Los Angeles, Tokyo, Mexico City and Rome;
- We shared our expertise regionally and nationally through the four publications "Small quakes, big impact: lessons learned from Christchurch", "Keeping tabs on the typhoon threat", "The big one: The East Coast's 100 billion dollar hurricane event" and "The risk of tropical cyclones in Brazil";
- We produced the animated video "Resilient Cities: pathway to a more sustainable future" to explain the benefits of "nat cat proofing" the design of cities (see below).



For more information see
swissre.com/rethinking/climate_and_natural_disaster_risk/



By taking the right precautionary measures, cities can increase their resilience to natural disasters: A papercraft video we produced in 2014 shows how. You can watch the video at swissre.com/urban_resilience.

Partnering for food security

805 million people – or one in 11 – are chronically hungry and malnourished on the planet today. By 2050, the world's population is expected to grow to an estimated 9 billion people, which will further aggravate the situation. Meeting this demand for food will be particularly challenging, as supply is constrained by factors such as climate change, depleted agricultural soils and the distribution of land, water and energy.

Most farming in the world is still carried out by small-scale subsistence farmers, who feed their families and sell a small surplus on local markets. This needs to change as more and more people are living in cities. Last year, the urban population exceeded the rural one for the first time ever, which means that cities are becoming increasingly dependent on the remaining farmers for their food.

The surplus subsistence farmers currently produce will not be enough to feed the growing population in our cities. Smallholder farmers must make the transition to commercial agriculture to feed the world. For this, they need access to credit so they can buy tools, seeds and fertilizer. But lending will remain restricted if banks fear that farmers will be unable to pay back their loans in the event of a lost harvest due to drought, flood or other disasters. Here, insurance can play the same role in the developing world as it already does in developed countries: protecting farmers against the perils of nature to keep them in business, even if disaster strikes.

Our notable achievements in 2014:

- Ahead of time, we met our commitment to provide insurance coverage to 1.4 million African smallholder farmers by 2017, and even exceeded our initial goal, with 2 million farmers benefiting at the end of 2014 (see page 19 for further details);
- We invited ninety clients, NGOs, banks and other stakeholders to the fourth Agricultural Reinsurance Workshop in Nairobi to discuss the measures needed to reshape agriculture in Africa to feed its growing population, identifying a lack of data on the importance of agriculture as a key challenge;
- As a follow-up to the Nairobi conference, we began providing such data in the new publication "Sub-Saharan Africa – breadbasket for a growing population" and by publishing "Agro insurance hotspots" on Mozambique and Kenya, which include overviews on the economics, production and perils of agriculture.

Supporting financial stability

Re/insurance supports financial stability by acting as a shock absorber and by promoting growth. Through its core business, it helps to reduce the impact of major risk events on the broader economy and provides it with long-term investment finance.

However, regulatory reforms, the macro-economic environment and asset-liability matching are three areas that currently impact re/insurers' balance sheets and their ability to promote financial stability. Taken together, these three pillars form the basis of our Top Topic "supporting financial stability".

Financial stability emerged as a key topic in re/insurance after the 2008/2009 financial crisis, which revealed flaws in the supervisory system. New regimes were introduced to address the root causes of the crisis. Today, insurers face a new dimension of macro regulation and new institutions unfamiliar with our sector. This is particularly relevant now, given the ongoing debate on systemic risk in re/insurance and the impact of regulatory reform on investments. That is why we expanded the financial stability topic in 2014 to include infrastructure investment reform and developing business from Solvency II.

Our notable achievements in 2014:

- We cooperated with the Institute of International Finance (IIF) to publish the report "Infrastructure Investing. It Matters.", which highlights the importance of infrastructure growth and partnerships to fund its investment;
- We collaborated with the World Bank's Global Infrastructure Facility (GIF) as an advisor to help establish infrastructure investments as an asset class and to provide innovative insurance risk solutions for infrastructure investments (see page 39);
- We continued to keep a close eye on Solvency II developments, seeing as reinsurance can have a measurable effect on our clients' capital requirements.



For more information see
swissre.com/rethinking/food_security/



For more information see
swissre.com/rethinking/financial_stability/



Swiss Re collaborates with the World Bank on infrastructure investment strategies

According to the OECD, less than 1% of the USD 80 trillion or so managed by institutional investors (eg re/insurance companies and sovereign wealth funds) is earmarked for infrastructure investment. However, emerging markets and developing economies, especially, are facing a massive gap in infrastructure investment: it is estimated that an additional USD 1 trillion to USD 1.5 trillion will be required to meet demand until 2020 alone.

To unlock the potential of infrastructure investment, the World Bank has launched its Global Infrastructure Facility (GIF), a partnership of public and private sector entities. We took part in the GIF's launch event in 2014 to announce our collaboration as an advisor. Swiss Re and other re/insurers can play a crucial role in promoting infrastructure investment: not only is our industry one of the largest institutional and long-term investors, it also offers the risk transfer solutions needed to protect investments.

To attract more long-term investment, however, infrastructure needs to become established as a standardised and tradable asset class. In our cooperation with the GIF, we focus both on infrastructure as an asset class and effective risk transfer solutions.

www.worldbank.org/en/topic/publicprivatepartnerships/brief/global-infrastructure-facility

Our Centre for Global Dialogue

The Swiss Re Centre for Global Dialogue is an important platform for interaction with our external stakeholders. Located near Zurich, this state-of-the-art conference centre hosts client and expert events. It allows us to present our thinking on some of the key issues confronting our industry and society at large, while exploring topics that are critical to a better understanding of the risk landscape we are facing.

Besides organising dialogue events, the Centre is responsible for executive client training and engages in research projects with third parties, principally from academia. These projects provide us with fresh perspectives on topics of pressing concern to the re/insurance industry. The Centre also manages some of Swiss Re's key external networks.

The Centre reflects our commitment to being a knowledge company. We believe that by openly exchanging and sharing this knowledge we, our clients and stakeholders can be "smarter together".

Below you can read summaries of three events we held at the Centre in 2014:

Connecting generations: Funding longer lives

When we celebrated our 150 Year Anniversary in 2013, the Centre for Global Dialogue launched a series of events under the motto of "Connecting generations". This series continued in early 2014, first focusing on our Top Topic of "funding longer lives". A mixed group of entrepreneurs, industry experts, government representatives and researchers met to discuss the roles of different generations in tackling the financial challenges posed by our ageing societies.

The discussion revealed two ways of trying to address the looming pensions' crisis. The first is financial: Individuals should be encouraged to save more, while private and employers' pensions must be further developed. Insurance schemes covering care costs could also help, but need time to develop. The second is to challenge our current work-life patterns. It is neither financially feasible nor economically optimal that most workers retire in their early 60s. We all need to be much more flexible in rethinking our working lives and retirement, so individuals can choose a lifestyle that suits their personal and financial circumstances.

It was also argued, however, that we may not just have to rethink pensions and retirement, but the concept of ageing altogether. New technologies are already being developed that have the potential to fundamentally change the way we age. They include, for example, augmentation of existing organs, bionic implants, personalised medicine and diagnostics such as biometric sensors. When such "next society" technologies begin to influence both our longevity and our investment decisions, this will raise profound moral, social and political questions for our societies.

Natural catastrophes and man-made disasters

Each year, an early edition of our renowned *sigma* series provides a detailed analysis of natural catastrophes and related losses witnessed in the previous year. When this *sigma* edition was published in 2014, the Centre for Global Dialogue held a one-day conference to highlight some of the key findings and strategic issues emerging from the data.

Although the numbers vary from one year to the next, there has been a clear trend: Natural catastrophes are now responsible for more human casualties and higher financial losses than ever before, particularly in densely populated and unprotected locations. In the face of this mounting challenge, the re/insurance industry is looking for ways to better manage natural catastrophe risks.

Re/insurers have developed some very sophisticated models to handle natural catastrophe risks. However, a key theme of the conference discussions was how important it is to make societies and governments more aware of the risks they face, and to make the existing risk expertise available to a wider public. A second focal point was the impact that climate change is having on the frequency and severity of extreme weather events. Conference participants came to the conclusion that tackling these growing challenges requires better cooperation between all the parties involved.

The autonomous car: Risks and opportunities for the re/insurance industry

Autonomous cars have recently been identified by our emerging risk specialists as a development that may pose a significant challenge to the re/insurance industry (see case study on "new forms of mobility" in the 2013 Corporate Responsibility Report, page 28). A two-day conference, organised by the Centre for Global Dialogue, sought to stimulate the debate on this topic, by bringing together manufacturers, technology producers, lawyers and road safety experts.

Until recently, cars have evolved incrementally in appearance and capability, and the fundamental model of the driven car has changed very little. The new technologies that are already on the market are designed to assist drivers but, in future, they may actually

take over from them, making cars autonomous. Almost all major car manufacturers are working on such prototypes, so this is not the stuff of science fiction.

The speed with which autonomous cars will spread depends on a number of factors, such as consumer preferences, legal environments and data security. But questions surrounding insurance and insurability will also play a crucial role; what is certain is that the car insurance market will change and that insurers will need to be flexible in their product offerings. We will continue to work with our clients and partners to keep abreast of the challenges and opportunities created by the arrival of the autonomous car.



Jayne Plunkett, our Head Casualty Underwriting Reinsurance, personally addresses the two-day conference at Rüschlikon on "the autonomous car". This is an important topic for us and the industry, because the technology will create significant challenges as well as new opportunities for re/insurers.

Collaboration with (inter-)governmental and academic institutions

We collaborate with various (inter-)governmental and academic institutions both to promote effective approaches to sustainability challenges and to share our expertise on managing specific risks.

Working with (inter-)governmental agencies to promote effective sustainability responses

- In Europe, we worked with Insurance Europe in Brussels on the European Commission's Green Paper on the Insurance of Natural and Man-Made Disasters: In addition to regular involvement in exchanges and feedback, one of our senior managers took part in discussions with the European Commission;
- In the US, we maintain regular dialogue with the National Association of Insurance Commissioners (NAIC), principally on climate change and natural catastrophes;
- In Switzerland, we provide a committee member of the OCCC (*Organe consultatif sur les changements climatiques*), an advisory body on climate change set up by the Swiss Federal Administration.

Working with (inter-)governmental agencies to share risk management expertise

- With Global Partnerships, we have an entity that works strategically with public-sector bodies to improve risk resilience:
 - directly with governments, recently eg with the Government of Uruguay to create a solution providing cover for drought conditions that affect hydropower generation, with the State Council of China to improve resilience against natural catastrophe risks, or through the Pacific Catastrophe Risk Insurance Pilot (see pages 16–18);
 - with the United Nation's International Strategy for Disaster Reduction (UNISDR) in a consulting role;
 - with development agencies such as the United States Agency for International Development (USAID), the UK's Department for International Development (DFID), the Swiss Agency for Development and Cooperation (SDC), the World Bank, the Asian Development Bank (ADB), the Inter-American Development Bank (IADB) or the German Development Bank (KfW);
- We regularly contribute to platforms such as the World Economic Forum, B20, G20 and G8 to share our insights on key risks, and support the United Nations Framework Convention on Climate Change (UNFCCC) process;
- We recently contributed to the World Economic Forum's Global Risks reports (see page 30 for the 2014 edition).

Working with academic institutions

- We support the Integrative Risk Management project at the Swiss Federal Institute of Technology (ETH) Zurich, which aims to advance a holistic approach to managing risks and educate a new generation of researchers;
- As a member of the steering committee of Swiss-based ProClim – the Forum for Climate and Global Change – we support integrated research activities and get access to the latest scientific findings;
- Through our co-chairmanship of the PSI Board, we cooperate with Temple University on the role of insurance in improving society's risk resilience.

Selected communication products in 2014

The publications and other media we produce in-house or in cooperation with our partners play an important role in our efforts to help clients and society form effective responses to key risks. Listed below are the publications mentioned in this chapter on pages 36–41. Further Swiss Re publications are displayed on pages 68–69.

Swiss Re publications



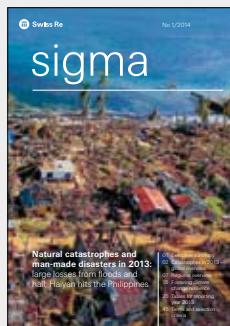
Agro insurance hotspot (on
Mozambique and Kenya)



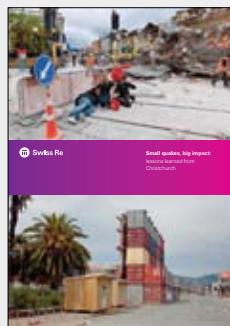
Keeping tabs on the typhoon threat



Risky cities (on Los
Angeles, Tokyo, Mexico
City and Rome)

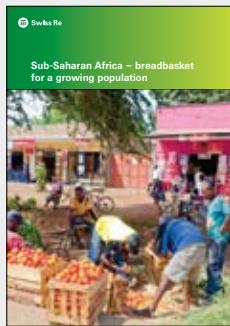


**sigma 1/2014:
Natural catastrophes
and man-made
disasters in 2013**

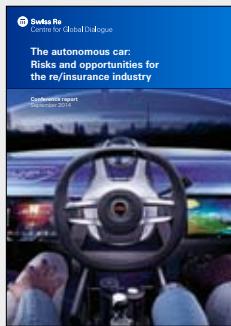


**Small quakes,
big impact:
lessons learned
from Christchurch**

Publication with partner organisation



**Sub-Saharan Africa –
breadbasket for a
growing population**



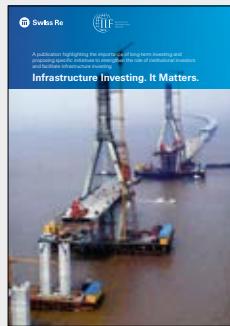
**The autonomous car:
Risks and opportunities
for the re/insurance
industry** (Conference
report)



**The big one: The East
Coast's USD 100 billion
hurricane event**



**The risk of tropical
cyclones in Brazil**



With the Institute of
International Finance:
**Infrastructure
Investing. It Matters.**