



Insurers and Climate Change: Taking Risk Management to the Next Level

By Laurence Loubières

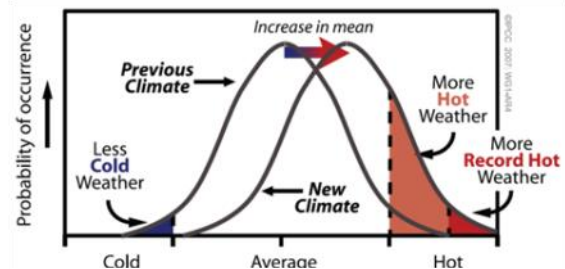
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Although climate change has been at the forefront of public debate for over a decade, many insurers have yet to realize the extent of their exposure to the array of risks and opportunities that it presents. Their responses have typically remained scattered across business lines and fall short of embracing climate change as a main business driver. Embedding climate change within their Enterprise Risk Management could take insurers to the next level. As co-owners of the insurance companies, shareholders have an opportunity to urge them to address risks related to climate change. Doing so is in the best interest not only of insurers, but also of investors and society at large.

CLIMATE CHANGE CREATES A COMPLEX ARRAY OF RISKS FOR INSURERS

Global warming is increasing the probability and magnitude of extreme weather events

Both historical observations and projections made by the Intergovernmental Panel on Climate Change¹ indicate that increases in the mean world temperature have amplified the probability of the occurrence of extreme weather events (see Figure 1). For example, by 2090, floods of coastal areas that typically occurred once in a century could occur every three to four years, and major floods previously likely to occur every 500 years could occur as frequently as once every 50 years.



Source: Intergovernmental Panel on Climate Change

Figure 1. Probability of extreme weather occurrences with increase in mean world temperature.

In recent years, significant changes in weather patterns, involving abnormal heat and cold waves, storms and floods in Europe, severe droughts in Australia, and snow storms and hurricanes in North America, for example, have been observed throughout the globe (Figure 2). The reinsurer **Munich Re**'s annual natural catastrophe report² reveals that the frequency of weather-related catastrophes has tripled since 1950 and continues to increase yearly.

Climate change is moving natural systems toward "tipping points"

Some climate change impacts may not occur gradually through incremental modifications but rather may instead result from abrupt disruptions of natural systems and balances. These systems will undergo potentially irreversible changes, triggering widespread societal consequences. In a recent report,³ **Allianz** and the World Wildlife Fund identified a list of major potential disruptions in world systems. They include the prolonged interruption of the Asian monsoon cycle, the potential die-back of the Amazon rainforest and drought in the Amazon basin, the global rise of the

REGIONAL ANOMALIES OF ANNUAL PRECIPITATION IN 2009
WITH RESPECT TO THE 1961-1990 MEAN

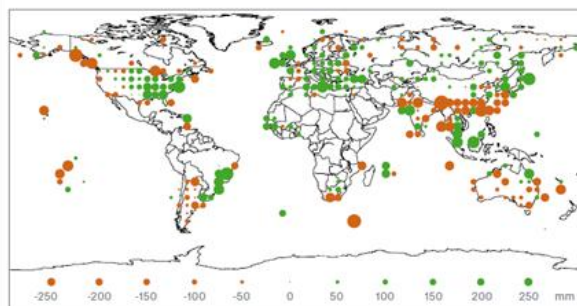


Figure 2. Regional anomalies of annual precipitation
Source: Munich RE.

sea level by two meters by the end of the 21st century, and the desertification of south western North America.

Insurers face both the direct and indirect impacts of climate change

Extreme weather events or systemic disruptions – such as a global sea level rise – have a direct impact

In 2009...

- The year was the 32nd consecutive year of above average global temperatures.
- The number of natural catastrophes (850) was higher than the long-term average (770).
- Despite the lack of major catastrophe, overall data shows an increase in weather-related catastrophes.
- Nine out of the top 10 insured loss events in 2009 were weather related. They include six severe weather events (tornadoes, hail, and thunder storm winds), one winter-based storm event, and one tropical system event.
- Insured losses totalled USD 20 billion, most of which were related to weather-related catastrophes.
- In the U.S., three weather events caused insured losses of USD 1 billion.
- In Europe, one windstorm (Klaus) caused insured losses of USD 3.3 billion.

Compiled from Munich Re and Aon Benfield websites

on many assets that are covered by insurance policies: human life and health, properties, companies, plants, crops, transportation means, and power generation plants (including nuclear plants). A catastrophe triggers a surge in claims and requires a sufficient level of capital.

According to a United States government report⁴, weather-related losses accounted for 80 per cent of the USD 320 billion losses paid by U.S. insurance companies between 1980 and 2005. **Aon Benfield**'s⁵ and **Munich RE**'s⁶ annual catastrophe reports track the insured cost of weather-related catastrophes and show how increasingly frequent and expensive they have become.

2010 will probably be another costly year due to winter storms that struck the eastern part of the U.S. in January and February and are likely to cost insurers more than USD 2 billion.⁷

Insurers face *direct* exposure to climate change risks only where assets are insured. The insurance penetration gap remains very high between industrialised and emerging markets, with 10 countries (USA, Japan, UK, France, Germany, China, Italy, Netherlands, Canada and South Korea) accounting for 86 per cent of the world's life and non-life premiums.⁸ Weather-related catastrophes happening in these countries have more impact on insurers than those taking place elsewhere.

However, most of the sector's growth is occurring in Asia (especially China and India) as these economies continue to develop and grow. While the amount of premiums in industrialised countries actually declined in 2008 on an inflation-adjusted basis, life premiums rose 15 per cent and non-life premiums rose 7.1 per cent in emerging markets.⁹ Growth opportunities represented by these economies could be eroded because of climate change.

Coastal populations, for whom the risk of severe hurricanes and storms is the highest, are growing in many parts of the world. For example, according the U.S. Census Bureau, by 2030 more than 12 million additional people will be living in Florida and Texas, which are among the states most at risk from Atlantic hurricanes. The storm Xynthia that devastated parts of France's Atlantic coast in March 2010 triggered insured losses estimated at around USD 1.6 billion.¹⁰

The value of insured coastal property in states bordering on the Atlantic Ocean and Gulf of Mexico was USD 8.89 trillion in 2007. In Florida it amounted to almost USD 2.46 trillion, representing 79 per cent of the state's total insured property values.

In New York it was USD 2.38 trillion, representing 62 per cent of the total. In Connecticut, Maine and Massachusetts the value of insured coastal property exceeds 50 per cent of the state's total insured property values.

Insurance Information Institute website¹¹

The worldwide trend of urbanisation adds to the potential severity and complexity of weather-related catastrophes for insurers. More than half of the world's population already lives in cities and the world's urban population is expected to increase by 3.1 billion people between 2007 and 2050.¹² The urban population increase is expected to surpass the global population increase of 2.5 billion people during the same period. By 2025, eight cities are projected to have more than 20 million inhabitants, and 22 cities will have more than 10 million inhabitants. Weather catastrophes affecting these "megacities" are likely to cause damage to high concentrations of assets, exposing insurers to claims of exponential proportions.

As major institutional investors holding about USD 55 trillion in assets under management and 30 per cent of the world's conventional investment management assets, insurers also face *indirect* impacts of climate change on their portfolios. At first glance, insurers' direct investments in property and real estate appear to represent only a small proportion of their overall portfolios. However, when other investments, indirectly related to real-estate, are included (such as loans, mortgages and associated securitized instruments such as commercial mortgage-backed securities or residential mortgage-backed securities) their exposure to real estate is actually much greater. For example, as of December 31, 2009, 17.7 per cent of U.S. insurer **MetLife's** investments, amounting to USD 54.6 billion, were composed of real estate equity investments, commercial and agricultural mortgages. Physical damage to properties therefore impacts both direct and indirect returns of this asset class. Economic disruptions triggered by extreme weather events lower both insurance companies'

performance and equity returns. They also trigger inflation and interest rate variations, negatively impacting the revenues of fixed-income assets.

Meanwhile, globalisation spreads the impacts of catastrophic events to other parts of the world, slowing down economic activity, disrupting supply chains, and triggering migrations. A prolonged disruption of the monsoon cycle could, for example, compromise economic growth in Asian countries and trigger ripple effects throughout the world.

Insurers' business models are challenged in many respects by climate change. Increased claims and expenses as well as decreasing revenues in the form of premiums or asset returns reduce insurers' profitability and long-term sustainability. These challenges may also trigger costly recapitalization operations that can ensure a company's solvency, but may hurt shareholder's equity.

INSURERS' RESPONSES TO CLIMATE CHANGE REMAIN MORE REACTIVE THAN PROACTIVE

Given the size of the insurance industry – it is the largest in the world in terms of revenues and second largest in terms of assets – and given its involvement in so many aspects of the world economy, the industry could prove to be an essential component of any serious global effort to tackle climate change.

At least two major industry associations appear to recognize the need for insurance companies to be more proactive. The Geneva Association, a self-described "international insurance 'think tank' for strategically important insurance and risk management issues,"¹³ gathers 80 CEOs of global insurance companies and in 2008 launched the CC+I (Climate Change + Insurance) project to foster awareness among its members and to explore the complexity of risks and opportunities associated with climate change. In 2009 the association published a "Kyoto Statement" expressing its members' commitment to their customers, policy makers, the UN Climate Change Conference and the insurance industry, to address climate risks. The same year, the Geneva Association also published a significant report¹⁴ detailing its contribution to the global debate and stating the case for insurers to become more proactive in this area. The report also highlights how insurers could exert real leadership in the global fight against climate change by

integrating it into their business models and by establishing best practices.

The U.K. Chartered Insurance Institute, with the London Market Faculty, published in 2009 the report *Coping with Climate Change*,¹⁵ which also covers various challenges and opportunities for insurers. The document calls for more proactive engagement of insurers to avoid being caught off guard by the impacts of climate change and to be able to benefit from the potential new markets that it will create.

Insurance is the world's largest industry and is paid nearly 8 per cent of global GDP to be the world's primary shock absorber of risk.

Climate Risk, 2007¹⁶

When it comes to the response of insurance companies themselves, however, the extent to which they are proactively tackling this issue varies greatly. Below is an overview of three areas of initiative: adaptation, mitigation and disclosure.

Adaptation

Adaptation initiatives seek to reduce insurers' vulnerability to climate change, as well as to take advantage of the opportunities it offers. Such initiatives include:

1. Reducing insurers' exposure to catastrophic events

- Assessment of areas at risk (such as coastal regions and major harbours) in land-use planning and management.

Travelers, Swiss Re and Lloyds are part of the U.S. Resilient Coasts Initiative to reduce coastal exposure to climate change impacts.

- Assistance to customers exposed to severe weather events in order to help them be prepared and avoid losses.

AIG helps policy holders living in some exposed coastal areas of the U.S. to prepare for hurricanes and minimize potential damages.

- Risk mitigation through financial instruments such as Catastrophe (Cat) bonds and weather derivatives.

Swiss Re, Partner Re and Marsh and McLennan are members of the Weather Risk Management Association dedicated to strengthening the use of weather-related financial instruments.

Scor SE has developed a multi-year property catastrophe bond that provides protection of USD 200 million for exposure to earthquakes and hurricanes in the USA and Puerto Rico.

- Withdrawal from business lines.

In the UK, universal access to flood insurance will be cancelled in 2013. In 2010 Allstate has decided no longer to insure trailers on coastal areas in Louisiana and North Carolina.

- Identification of climate change as a potential liability in insurance contracts.

In March 2010, Munich Re published research about the new potential liabilities represented by climate change.

2. Designing new insurance products to benefit from potential opportunities

- Products to tackle weather-related catastrophes in emerging countries.

In 2007 Swiss Re launched a Climate Adaptation Development Programme designed to transfer weather-related risk from non-OECD countries. Swiss Re is partnering with the NGO Oxfam in Ethiopia to develop a form of crop micro-insurance against weather events.

Also in Ethiopia, Axa has designed a rainfall derivative product that has been used by the United Nations World Food Programme to cover losses due to drought.

- Insurance policies for renewable energy plants.

Axa derives an annual EUR 9.5 million in premiums from a portfolio of wind farms in Germany.

3. Participation in the establishment of new standards to improve resilience to climate events.

- Involvement in the design of new industry codes such as building codes (to improve resilience to extreme weather events).

Allstate and State Farm have joined the Protecting America initiative that promotes improved building codes. In Canada, the Co-operators' Group has been part of a project to construct a house that can resist to winds of up to 200 km/hour.

Mitigation

Mitigation initiatives aim to reduce the emission of greenhouse gases, both through the company's operations (such as its offices, products and investments) and among the company's stakeholders (such as clients and investors) .

1. Reduce the company's carbon footprint

- Implementation of climate change governance structures, policies and systems to track and reduce the company's own emissions.
- Implementation of energy efficiency initiatives.

Aviva's carbon reduction initiatives have focused on energy efficiency in buildings, low-cost technologies, and investigating savings in the company's transport fleet.

- Tracking the company's greenhouse gas emissions and defining reduction commitments.

Aviva aims to reduce emissions by 30 per cent by 2020 from a 2006 baseline. Allianz aims to reduce emissions by 20 per cent by 2012 from a 2006 baseline.

- Mitigating the company's emissions by entering into Clean Development Mechanisms.

Tokio Marine & Nichido has been involved in a reforestation project of mangroves in South East Asia since 1999 and has committed to undertake this project until the 22nd century.

2. Design new insurance products to encourage climate-friendly practices

- "Pay-as-you-drive" formulas for car insurance, in which premiums are based on mileage.

Aviva is providing this service in Canada, France and Turkey. Axa is offering a similar service in Canada, Italy, Belgium, Germany and Switzerland.

- Premium discounts for fuel-efficient vehicles.

Allianz offers reduced premiums to customers insuring low-emission vehicles and also gives the possibility to offset the vehicle's emissions.

- Premium discounts for customers using public transportation.

Allianz reduces the premiums of customers who hold annual transportation passes.

- Premium discounts and specific policies for LEED-certified or green buildings.

Fireman's Fund, a U.S.-based subsidiary of Allianz, launched the Green-Gard suite of policies to encourage the construction or restoration of buildings using environmentally-friendly practices.

3. Integration of climate change issues in asset management

- Integration of sustainability criteria in all classes of assets under management: equities, bonds, real estate and others. The climate change task force of the National Association of Insurance Commissioners is looking at insurers' investments.

Storebrand avoids investing in companies that represent serious climate and environmental damage, as well as in companies that take inadequate climate measures in high emissions industries.

4. Integration of climate change issues in direct investments

- Direct investment in renewable energy and green technologies.

Munich Re is involved in the construction of a large-scale network of solar thermal power plants distributed throughout the Middle East and North Africa region. The aim is to produce sufficient power to meet around 15 per cent of Europe's electricity requirements and a substantial portion of the power needs of the producer countries. In Canada, Sun Life and Manulife are investing in renewable energy projects such as wind farms and co-generation plants.

5. Participation in industry initiatives to promote awareness

- Involvement in public, regulatory and industry debates through coalitions and working groups such as the UNEP-FI¹⁷ and the UNPRI.¹⁸
- Involvement in climate change research.

Munich Re has worked with Sir Nicholas Stern on climate change economics and launched the Centre for Climate Change Economics and Policy.

- Commitment to principles that tackle climate change.

Swiss Re and Munich Re have committed themselves to the Climate Principles¹⁹ of the Climate Group alongside banks and financial services companies.

Aviva is a founding member of the ClimateWise initiative,²⁰ which has brought together more than 40 insurers from Europe, North America and South Africa around the ClimateWise principles.

The 2009 CERES report,²¹ which compiles responses from 246 insurers, reinsurers, brokers and insurance organizations to a survey on climate change, details 643 initiatives gathered under 10 major themes. The report shows that while property and casualty insurers are the most active, health and life insurers have undertaken relatively few initiatives. European insurers are generally more advanced than North American ones. In each of the 10 themes highlighted by the CERES report, there remains considerable room for improvement.

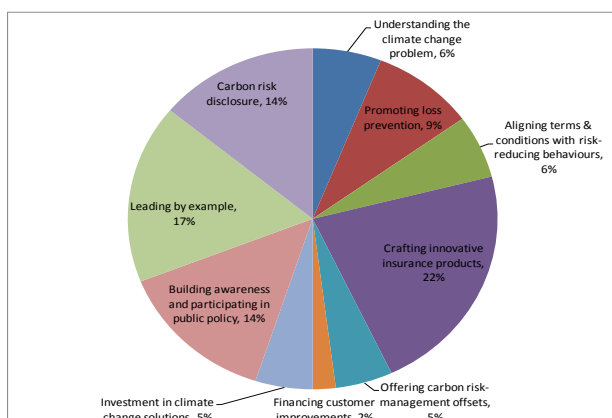


Figure 3. Prevalence of insurers' climate change activities.
Source: CERES

This list is by no means exhaustive and insurers' commitments are not equal among them, but it gives an idea of the some ways in which insurers have started to address climate change.

Disclosure

Insurer's disclosure to investors and other stakeholders regarding their exposure to and management of climate change issues is another key area in which practices vary. Overall, insurers' disclosure on their integration of climate change risks remains insufficient. In the U.S., for example, many major insurers and reinsurers fail to even mention climate change as a potential risk in their regulatory 10K filing reports with the Securities Exchange Commission (SEC). New regulatory constraints are likely to push insurers to disclose more information on this issue.

There are some exceptions, however. Stronger reporters are participating thoroughly in the Carbon Disclosure Project, for example, and making responses publicly available. **Axa's** response to the CDP6 questionnaire is well documented and enables readers to assess the extent of the company's integration of climate change at all levels.

The National Association of Insurance Commissioners, a U.S. insurance regulatory authority, issued in March 2009 a mandatory requirement that insurance companies disclose to regulators the financial risks they face from climate change as well as actions they are taking to respond to those risks.²² All U.S. insurance companies collecting annual premiums of USD 500 million or more will be required to respond to an annual survey with an initial reporting deadline of May 2010.

In February 2010, the SEC issued interpretive guidance²³ on how existing disclosure rules may require companies to disclose the impact of climate change on their business. The guidance highlights the following as areas in which climate change impacts may trigger a requirement to disclose:

- The impact of climate change legislation and regulation,
- The impact of international accords and treaties relating to climate change,

- The indirect consequences of regulation or business trends affected by climate change, and
- The physical impacts of climate change on the company's business.

INTEGRATING CLIMATE CHANGE IN ENTREPRISE RISK MANAGEMENT (ERM) WOULD TAKE INSURERS TO THE NEXT LEVEL

While the initiatives described above are a step in the right direction, for most companies they remain sporadic and scattered across business lines. It may be that insurers do not clearly understand the extent of the risks that they face due to climate change, nor of the potential returns they might achieve through a more strategic response. Climate change challenges insurers in many ways, but it also presents tremendous business opportunities if it is regarded, at all levels, not only as a constraint but also as a major driver of the business model. An efficient way to move in this direction is to integrate climate change into a company's Enterprise Risk Management (ERM).

What is ERM?

ERM emerged in the 1990s as an approach to risk management that aimed to address a company's risk exposure from a holistic perspective. It is intended to break away from a "silo-based" approach to risk management in which each entity of a group focuses on its own activities.

ERM is "the process by which organisations in all industries assess, control, exploit, finance and monitor risks from all sources for the purpose of increasing the organisation's short and long term value to its stakeholders."

Casualty Actuarial Society²⁴

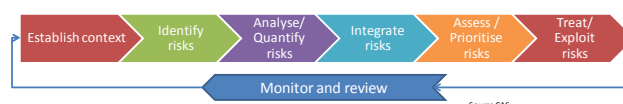
The purpose of ERM is to provide a company with the means to assess and monitor an increasingly complex array of risks in a consistent way throughout the organisation in order to prevent downturns and create value for shareholders. ERM allows an organisation to optimize its risk exposure

given its risk appetite. It deals, therefore, as much with value preservation as with value creation.

The Casualty Actuarial Society (CAS)²⁵ identifies four areas of risk for any organisation that might affect its value.

1. Hazard
2. Operational
3. Financial
4. Strategic

The CAS approach involves taking the following process steps to analyse each type of risk and to build the ERM system.



Another widespread ERM approach is the COSO II model,²⁶ in which organisations' objectives are gathered under four categories:

1. Strategic
2. Operations
3. Reporting
4. Compliance

To achieve risk monitoring, eight components of risk management have to be applied to the four types of objectives (see Figure 4). They include:

1. Setting an appropriate internal environment,
2. Defining objectives,
3. Identifying events that may affect the objectives,
4. Assessing the risk they represent,
5. Defining responses to the risks,
6. Controlling activities to verify that responses are efficient,
7. Producing information and communication material to report to the board and to stakeholders, and
8. Monitoring the whole process through continuous evaluation and improvement.

ERM helps the board to make sure that the whole company's structure and processes take into account the various risks threatening the strategic



Figure 4. COSO II model for ERM

Source: COSO

objectives, that efficient responses are in place, and that constant monitoring is occurring.

Some critics argue that the ERM approach remains too focused on accounting and audit principles to actually empower the company to deal with the interconnectedness of complex risks.²⁷ From this perspective, risk management in a company deals as much with the values and connectedness of the different business entities as it does with results that can be assessed. Another reproach is that ERM is a consultant-driven initiative that companies do not actually need.

Like every process, the ERM approach has to be sustained by a strong corporate culture that is management and board driven, and that also pervades all levels of the company. The tool in itself cannot replace the necessary vision to address risks in an integrative manner; otherwise, as the ERM critics rightly point out, it will end up missing its goal. The involvement of all the company's departments therefore remains a key element of success in the implementation of an ERM approach.

ERM applied to the insurance industry

Applied to insurance companies, ERM provides a portfolio approach to underwriting, investment and finance risks.

The ERM approach connects premium, claims and investment risks with capital requirements. Pricing strategies arise from the assessment of the cost and

"In an insurance business, the 'enterprise risk' can be defined as the portfolio of all significant risks that arises from the three core functions (i.e., underwriting, investment and finance) including their interactions both in objective and subjective terms at a specific period of time during the operation."

Dr. Madhu Acharyya²⁸

returns associated with the different business lines in light of a global "risk appetite." The relevance of reinsurance contracts can be reassessed on a company-wide basis instead of an operation basis. Investment portfolios can be optimized to ensure that capital requirements are matched at all times while remaining sufficiently exposed to market upturns.

A PriceWaterhouse Coopers²⁹ report published in 2008 shows that, although ERM's implementation within the insurance industry has risen significantly since 2004, questions remain about its actual integration within companies. The report argues that companies can make the best use of this approach only if the whole organisation embraces it within a risk management culture. It therefore requires the involvement of all business divisions and not only of senior management.

Currently external stakeholders are helping to drive the implementation of ERM within the insurance sector. For example, in Europe, the Solvency II Directive is asking insurers to implement model-based monitoring of their capital to ensure that they avoid insolvency situations. In connecting capital and risk management on a company-wide basis, the Solvency II requirements are similar in some respects to the ERM approach. European insurers and reinsurers such as **Axa** and **Scor SE** have therefore implemented ERM as a useful tool to comply with a new regulatory environment.

Meanwhile, credit rating agencies such as Standard & Poor's (S&P), A.M. Best, Moody's, and Fitch are increasingly integrating ERM as a component of their assessment of insurers. Recent reports by S&P show that European³⁰ and North American³¹ insurers are slowly improving their ERMs, although to date only 2 to 3 per cent of insurers in both regions have "excellent" ERM. Significant improvements can be made by insurers worldwide.

In addition, actuaries are also calling for better integration of the investor's point of view in insurers' ERMs,³² so that the investor can become better aware of how the company's risks affect his/her own portfolio risks.

Climate change is a typical "emerging risk" for insurers' ERM

Since climate change is an issue that affects all aspects of insurers' business models, the holistic ERM approach is an appropriate tool to address it. ERM also allows the company to view climate change in terms of value creation for shareholders.

Climate change typically belongs to the "emerging risk" category of ERM frameworks. Emerging risks are difficult to quantify because their frequency and impact are not well known. However, should these risks materialize they would have a potentially high impact on the company's returns. S&P's ERM evaluation process for insurance companies³³ specifically mentions climate change as an emerging risk, along with nanotechnology, and genetically modified food.

Insurers and reinsurers that have already integrated climate change in their ERM, such as **Axa**, **Partner Re** and **Travelers Insurance Group**, are already earning the highest agency ratings. Having proactively embraced the climate change challenges within their strategies, they are more likely to avoid its detrimental consequences while benefiting from the business opportunities that it creates.

CONCLUSION: INVESTORS SHOULD ASK INSURERS HOW THEY INTEGRATE CLIMATE CHANGE IN THEIR RISK MANAGEMENT FRAMEWORKS

Greater integration of climate change by insurers into their ERM will benefit :

- The company, by improving its own sustainability and strategic risk management,
- Shareholders, also through improved risk management as well as disclosure on the insurer's ability to manage risk while benefiting from opportunities arising from climate change, and

- Other stakeholders, through adaptation and mitigation initiatives that provide direct benefits and can also leverage change in other industries.

Asset managers and asset owners would benefit from engaging with insurance companies on the issue of climate change.

A key focus of such engagement should be disclosure, with the goal that insurers provide regular information to investors on how they are addressing not only the risks but also the opportunities related to climate change.

Another area of focus should be the integration of climate change in the ERM of the company. With its integrative approach, and support from a strong corporate culture, ERM is a relevant tool to address climate change not only as a regulatory constraint, but as an essential driver of the business model.

Investors can join coalitions that file climate change-related shareholder resolutions with insurance companies.

According to the Investor Network on Climate Risk³⁴, in 2010, 98 resolutions on climate change are targeting 82 U.S. and Canadian companies. This represents a 40 per cent increase over the 2009 proxy season. These resolutions focus on different issues such as the adoption of a climate change policy, the adoption of climate principles, the setting of specific greenhouse gas reduction objectives, the reporting and disclosure of climate risk initiatives, and the risk management of climate change.

Resolutions filed by shareholders on the proxy ballot of a company attract attention from the board, management and other shareholders. They can be a powerful tool to push companies forward on how they address climate change.

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⁵*Annual Global Climate and Catastrophe Report 2009*, Aon Benfield.

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¹⁶*From Risk to Advantage, A Climate Risk Report, General Insurers as Key Agents for Climate Change Adaptation, A Report for Zurich Financial Services Australia*, Climate Risk, www.climaterisk.net.

¹⁷UNEP FI United Nations Environment Programme Financial Institutions, www.unepfi.org.

¹⁸UNPRI United Nations Principles for Responsible Investment, www.unpri.org.

¹⁹Climate Principles, www.theclimategroup.org.

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²⁵*Overview of Enterprise Risk Management*, Casualty Actuarial Society, Enterprise Risk Management Committee, May 2003.

²⁶COSO: Committee of Sponsoring Organizations (COSO), a voluntary private-sector organization gathering industry

associations such as the American Accounting Association, the American Institute of Certified Public Accountants, Financial Executives International, The Association for Accountants and Financial Professionals in Business, The Institute of Internal Auditors. www.coso.org.

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³⁴Investor Network on Climate Change, accessed April 1 2010, <http://www.incr.com>.

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