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ClimateWise
REDUCING THE RISK FOR TOMORROW

Moving beyond the uncertainty of climate change risk

Applying the insurance principles of measurement, mitigation and diversification to the world's most challenging risk

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This ClimateWise Thought Leadership article is the first in a series which will be published throughout 2012. Each article is authored by an executive from a ClimateWise member organisation and aims to inspire debate around a new issue related to managing climate change risk which the author believes could yield value for the insurance industry if adopted more widely.

The ClimateWise Thought Leadership Series is intended to provoke debate. Join the discussion on the ideas contained within this article on LinkedIn (Search '**ClimateWise**' to find the Discussion Group), or connect with us on Twitter (**@ClimateWise**) or email (**info@climatewise.org**).

Summary

Inherent uncertainty means that every statement made in relation to climate change risk must be caveated, but that is not an excuse for inaction. I suggest three areas worthy of thought for insurers and insurance brokers.

Climate change will lead to an inexorable increase in property risk. We should seek to engage with affected communities to provide information, coverage and risk mitigation skills to a new customer base.

If risks are not to become "unaffordable" we need to avoid tipping points in the world's ecological balance. Knowledge has always been the best basis for decision taking and we can contribute to this debate through our loss modelling abilities.

Finally, if we imagine the world in 30 years time and contemplate the steps in between, we can identify technologies that have the possibility of being winners both for the climate and business. As in all business endeavour controlling risk will be key to the success of new product. Carbon Capture and Storage (CCS) is one such example. We should selectively engage.

Moving beyond the uncertainty of climate change risk

Fossil fuel energy has transformed our lifestyle. It gave us an industrial in place of an agrarian society providing a platform for wealth creation and extended life expectancy. In consequence world population grew from 1 billion to 7 billion people in two centuries. It has been a force for good.

It has also brought some challenges through air pollution and industrial disease which over time have been increasingly contained. Less immediately apparent is the challenge arising from the side effect of generating fossil fuel energy, the emission of greenhouse gases and their impact on the world's climate systems.

This is a relatively newly discovered risk which will have far reaching consequences and like all risk must be mitigated and managed. Its importance is widely recognised:

- The World Economic Forum's last Global Risks Report identified five risks that are of greatest importance to our economic system. Alongside chronic fiscal imbalances and global governance failures it highlighted rising greenhouse gas emissions, not least because of the relation to volatility in energy and food prices.

- Similarly Dr Fatih Birol, Chief Economist of the International Energy Agency, now argues that we have only five years to avoid 'catastrophic climate change' viewed from an energy infrastructure investment perspective.

The difficulty of climate science is that neither of these observations is "provable"; both the incidence and severity of risk carry some degree of uncertainty. Incidence and severity of risk is a familiar challenge to the insurance industry and we can contribute to building solutions. But what is the risk?
The effects of a sustained temperature rise are becoming apparent. The latest research from the Intergovernmental Panel on Climate Change predicts inter alia more severe and frequent natural disasters, sea level rise and crop failures. There are material economic consequences to such events and they give rise to insurable events; it is clear that global property risk will over time increase faster than GDP. However we do not welcome calamities because they stimulate premium growth and our first thought must be to use our expertise to help customers mitigate weather hazards and adapt to unavoidable risk.

Our business is built upon the identification of risk and measures which can mitigate its impact, the measurement (frequency and severity) of the residual risk and the use of our balance sheet to diversify it. As indicated climate change risk is full of uncertainty but the bridge between uncertainty and action is a plan and I would suggest three areas where our industry can seek engagement:

- Providing coverage for today's most vulnerable communities – i.e. adaptation

- Measuring horizon risk

- Partnering in mitigation programmes

1. Adaptation. New risks and new customers

The front line in climate risk is those communities where a small increase in weather risk significantly raises the risk to life and/or property in the community. Often this will be the world's poorer communities where agricultural production is at or close to subsistence levels as is common in parts of Asia, Africa and Latin America. But it also includes regions in more developed economies with high vulnerability to weather events such as the farming regions of North Eastern China, the Caribbean islands or indeed Florida.

Further detail from the Economics of Climate Adaptation (ECA) study is included in an Appendix to this article (provided by Swiss Re) to illustrate the sort of contributions insurers and insurance brokers can make here. This highlights three roles:

- Advice on risk reduction; we cannot avoid the event but cost effective mitigation measures can diminish the impact on people and property.

- Spreading the financial loss over time; this is our traditional role, annualising the cost of high severity low frequency events has for long been a vital ingredient in supporting economic growth.

- Reducing the gap between the economic and insured loss; the average insurance recovery from catastrophic weather events over the last ten years in what the IMF terms advanced economies was 53% whereas it was only 6.6% in emerging economies. Recovering from a catastrophic event is hard for all communities, for many of the world's most vulnerable and least developed communities the impact of the uninsured loss from a single disaster can reverse many years of development gains.

The application of core skills possessed by insurers and insurance brokers including loss modelling and the design of coverage programmes are needed today. This will involve stepping outside our historic customer base however as we will need to engage with new customers in the form of state and regional governments.

2. Measuring horizon risk. Assessing the cost of unformed risk

There are two work streams for climate risk, adapting to the unavoidable and preventing the more extreme. This latter risk requires action from governments which do not have clear near-term threats and perhaps because of this proceeds at too slow a pace.

More worrying than the latent GDP threat posed by greater frequency and severity of extreme weather events is the risk of passing so-called tipping points in the earth's climatic and other systems. There comes a point at which, for instance, rising global temperatures cause widespread permafrost melt in the Arctic Circle and the sudden release of underground stores of powerful greenhouse gases like methane. This in turn will accelerate global warming.

Perhaps the greatest hazard in this regard is the melting of land-locked ice, such as in Greenland or Antarctica. Once the melting process has surpassed an unknown tipping point, ice will start sliding underground and eventually into the oceans thereby raising sea-level. Once it has happened we cannot put it back without the benefit of an ice-age. Our coastline will change forever and many of the world's great Cities will be expensively in the wrong place.

Avoiding these tipping points is the scientific basis for intergovernmental agreements on the "safe" limits for global warming. Yet the uncertainty surrounding the precise timing or trigger for these thresholds seems to be diluting the emphasis on taking precautionary action to avoid them.

A core strength of the insurance industry is our ability to model the financial implications of such tail risks. Insurers or maybe better, Insurance Associations, could contribute to the understanding of the economic implications of scientific theory about extreme climatic scenarios and so help decisions on the pre-emption of such dislocations.

3. Partnering in mitigation programmes

CEOs should absolutely aim to deliver on corporate strategy and outperform targets. Also I believe they should aim to do "something for the future" i.e. activities that are unlikely to be a money earner during their tenure but are good for the long term health of the firm.

Developing new sales channels, employee development programmes or placing a flag in new markets which have growth potential for the future might be examples. Because of the scale of the dislocation it will bring to our way of life, climate change risk offers such opportunities. In particular there will be a change in the way we secure our energy sources over the next 30 years that must mean there will be a change in the insurable risks of the energy industry and when better to start a dialogue on that topic than now.

In fact it is already happening but could go further.

The main thrust of action on climate change risk is to find ways to stop the accelerating accumulation of greenhouse gases in the atmosphere. This interest is motivating insurers to forge new partnerships with the renewable energy industry to help advance the deployment of solar, wind and hydro-electric technologies. Such activities have identifiable commercial interests underpinning them because the technologies are already market ready or close to being so.

Other new technologies hold great potential but are further from achieving commercial viability. It can therefore be challenging to focus sufficient resources on such technologies even though the longer term pay-off could be significant. Carbon Capture and Storage (CCS) is one such example. It has the clear attraction that the energy source, fossil fuels, is well known to us and has plentiful supply, if regulatory and market conditions can be made conducive, it could prove highly valuable to the climate, the energy industry and insurers.

It is on the basis of the future potential of CCS that various members of the insurance leadership group ClimateWise have decided to work with energy sector companies to assess the regulatory and (pre-competitive) market conditions that would be required to make this technology commercially viable. This approach has wider applications for insurers in the clean energy space.

Conclusion

The need for climate-resilience is becoming a source of innovation and business opportunity for insurers. Combined with our traditional skills in risk-modelling and scenario building it can assist policy-makers and customers alike identify cost effective measures in their communities and plan better for future uncertainties. The areas I highlight here ask insurers and insurance brokers to think about new opportunities.