

Working with Deloitte

Walker Institute partnerships

Vulnerability of business to the risks of climate change

Business are starting to realise that there are both risks and opportunities from a changing climate

The devastating floods in the UK during 2007 show just how vulnerable property and infra-structure are to extremes in the weather. If such extremes become more frequent – as predictions of climate change suggest – the impact on business could be immense, particularly in areas like insurance, mortgage lending, commodities and retail.

For example, high risk areas could become less attractive to householders,

businesses and developers, due to an increased awareness of risks and higher insurance premiums. This could affect local and possibly regional property values, with implications for mortgage lenders amongst others. This is just one example of the kind of business impacts we could see over the next 20 years.

In response to this, Deloitte, the business advisory firm, and the Walker Institute for Climate System Research have started a joint initiative to provide scientific research and advice on the implications of climate change for business.



Providing the climate information that businesses need

If businesses are to consider the risks of climate change within their planning process they need more detailed information about future climate and its impacts.

However, predicting detailed changes in regional climate and extreme events, like severe storms that can bring flooding to Europe, is something that stretches the capability of current climate models – the tools we use to predict climate.

Businesses also need more information about climate over the next year or the next decade, rather than a “climate forecast” for 2050 or 2100.

The research at the Walker Institute focuses on improving climate models to provide greater regional detail and improved predictions of extreme weather, particularly for the next 5 to 20 years.

This partnership also gives us the opportunity for closer dialogue with Deloitte clients to understand their requirements and therefore to target our research more effectively.

Through this alliance, Deloitte clients will benefit from direct access to the latest scientific advances in the area of climate change.

“We believe that in five years time it will be the norm for Chief Risk Officers to have contingency plans based around the impact of climate on their business as the interdependencies of climate risk shocks and financial markets become better understood.”

Dr Lis Gibson, Deloitte partner leading the climate change impact services.

“We are delighted to have the opportunity to work with leading academics to bring the best advice to our clients in a fast moving and critical area such as climate change”

David Cruickshank, Chairman of the Board of Deloitte Partners.

Understanding extreme weather and climate events

In Europe we have experienced a series of extreme events in recent years that have highlighted our vulnerability to climate, such as the flooding in the UK in summer 2007 and the European heat-wave of summer 2003.

Researchers at the Walker Institute are analysing past extreme events to understand their regional and global climatic context.

For example, the flooding in Europe during summer 2002 was accompanied by the worst monsoon failure in India for three decades and an El Niño developing in the tropical Pacific. Our research shows that these separate events could have been connected.

Of course, it is not possible to attribute any single extreme event solely to climate change. However, over time it is expected that extreme events will become more frequent. For example, the latest Report

from the Intergovernmental Panel on Climate Change (2007) shows that heavy rainfall has become more frequent over most land areas during the 20th century—probably as a result of climate change.

We need to better understand the interactions between human-induced climate change and natural variations. For example, the north Atlantic sea surface temperature naturally oscillates between warm and cold over several decades. We have recently entered a warm phase so warmer than normal conditions could be more likely over Europe — this would act in addition to the warming effect of greenhouse gases.

If we are to accurately predict climate for the coming decades, it is vital to better understand how climate varies naturally and how these natural variations will both affect and be affected by climate change.



Soaring temperatures in the summer of 2003 forced rail networks to be closed because the track buckled in the heat. (Courtesy BBC).

Improving predictions of climate for the next 5 to 20 years

At the Walker Institute we are developing global climate models with higher resolution than ever before. Our models are better than typical coarse resolution climate models at simulating regional climate and weather systems, like hurricanes and mid-latitude storms.

We are beginning to explore future climate with our high resolution models. We are focussing on predicting climate for the next 5 to 20 years. When forecasting over these timescales we need to consider both the current state of the

climate system and increasing greenhouse gases. In the past, climate forecasts have ignored the current state of the climate system because they were focussing on what would happen to climate by 2050 or 2100.

Over the next few years, the increased skill of our high resolution models and our improved understanding of natural climate variability will help to improve predictions of regional climate change, climate extremes and hazardous weather.

“This partnership gives us the opportunity to use our expertise in climate extremes and hazardous weather, and our climate modelling capability, to really benefit business.

There is no doubt that in the next few years the enhancement in our models will lead to improved climate change projections, something of significant value to business.”

Prof Nigel Arnell, Director of the Walker Institute.

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