

# Solutions to your business needs

## Walker Institute for Climate System Research

### Adapting to our changing climate

Climate change is not just a problem for the end of the century – it is a problem that we are experiencing here and now. The science is clear—climate change is posing a real threat to society. Natural variations in climate, which occur even without human interference, also have profound impacts.

Even with a global effort to reduce greenhouse gas emissions, we cannot avoid climate change altogether. The world will

have to adapt to a certain amount of climate change—hotter summers and heavier bursts of rainfall, for example.

Many businesses are starting to take the issue of climate change very seriously through their approach to corporate responsibility. Although this is a crucial step, there is also a need to start thinking about assessing the risks, adapting and making the most of opportunities that a change in climate might bring.



*“It is time to bring planning for climate change into the mainstream of business life.”*

Association of British Insurers.

### We can no longer rely on the past to predict the future

Many businesses, such as the insurance sector, for example, currently use historical event sets to predict climatic conditions in the future. However, this assumes that the climate of the future will closely resemble the climate of the past. With climate change, this is unlikely to be a sound working assumption. Observations show that there have been changes

in the mean climate and also in the frequency of some extreme events, such as heavy precipitation. Climate projections indicate that these trends are likely to continue in the future.

Businesses need to find new ways of assessing their exposure to climate risk.

*“Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level.”*

IPCC Fourth Assessment Report, 2007.

### The need for more detail

What are the time and spatial scales relevant for business to plan and make decisions when taking into account climate risks?

Predictions for the end of the century are unlikely to be helpful for most industries. Information on time scales from one to ten years are probably more useful for many business applications.

Climate information on local and regional scales is what most industries would require to be able to adapt their business. For example, there is a need for more details on extreme events, such as hurricanes or heavy precipitation.

However, predicting local and regional climate and extreme events is a challenge for current climate modelling capability.

## Our proposition—conducting innovative research to predict our climate and its impacts

To help our customers assess the impacts of our changing climate, our focus lies on improving predictions of climate from seasons to decades into the future.

We focus in particular on providing more detailed information about local and regional climate and on extreme events, such as hurricanes or heavy rainfall.

We work at the interface between weather and climate, aiming at seamless predictions of our future climate.

Our expertise is in both human induced climate change and the natural variations which occur in weather and climate.

When looking ahead over the next one or two decades, it is vital to consider both natural and human factors.



## Integrating knowledge—delivering solutions

The strength of the Walker Institute lies in its capability to integrate knowledge from traditionally separate disciplines – including physics, mathematics, geography, biology and computer science – to tackle the problem of our changing climate as a whole.

We have some of the world's leading experts in weather and climate working with agricultural scientists, hydrologists, geographers and soil scientists.

The Walker Institute is therefore well-placed to offer the best possible advice to governments and businesses about expected changes in climate and their impacts over the coming seasons, decades and beyond.

## Communicating with you—a need for dialogue

Communicating our latest research to business, government and the general public is a priority for the Walker Institute.

The most effective way of achieving understanding is by two-way communication and long-term relationships. We need to understand in greater detail the information needs of our customers and similarly, our customers need to understand the nature and limitations of the information that science can provide.

As an example of our contribution to this dialogue, the Walker Institute is a partner in the Willis Research Network. This network is a major initiative which unites leading academic institutions to tackle the key catastrophe risk issues that the insurance industry faces, particularly in a world of climate change and associated uncertainty.

Other partners in our portfolio include Deloitte and the government of Queensland.

### What does the Walker Institute do?

- *Research*  
World-class research to understand and predict our changing climate and its impacts.
- *Advice*  
Work with partners to inform policy and practice.
- *Training*  
Provide state-of-the art training in integrated climate science.

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