

Mitigating the impacts of climate change for finance, insurance and utilities

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Summary

The private sector plays a significant role in contributing to and mitigating the impacts of climate change. Geographical research into the risks of climate change for insurance, finance and utilities companies has helped identify possible mitigation measures to protect these industries and reduce their climate impact, which include improving support for and regulation around climate-related investment, understanding the factors that motivate companies to change, and improving awareness of changing credit risks.

Challenge

The health outcomes of communities are often Climate change presents a growing and complex source of risk for the finance, insurance and utilities sectors. Climate change could result in [up to \\$143 trillion](#) of losses on current manageable assets by 2100; environmental externalities [already cost](#) \$4.7trillion globally each year, and are not fully reflected in prices. In insurance, losses for weather-related events [have reached 0.1%](#)

[of global GDP](#) in 2018, and liability risks from future climate change-related litigation are underestimated.

Better characterising these risks with geographical insights can help motivate decision-makers in these sectors – which have substantial influence over GHG emissions – to reduce climate impacts, reach net-zero targets, and mitigate risks both for their stakeholders and for society as a whole.

Solution

Geographers from the Global Sustainability Institute at Anglia Ruskin University, Drs Aled Jones, Candice Howarth (now LSE Grantham) and Irene Monasterolo (now WU Wien), examined the interaction between the financial sector and climate change.

The team conducted research with companies from the finance sector, government and international financial institutions via the Capital Markets Climate Initiative. This identified barriers to investment in climate change solutions, and explored opportunities for public-private partnerships to overcome these.

The researchers also sought to understand climate risks and their impact on infrastructure investment, working with actuaries to model climate-related investment credit risk to water and energy utilities in the East of England, using UK Climate Projections (UKCP09) and a pricing model for water to predict demand and supply in infrastructure and water.

Using scenarios and actuarial models they examined potential impacts on pension fund returns and economic growth.

Benefits

Better decisions

The research directly informed the delivery approaches of International Climate Finance, a £2.9 billion fund set up by the UK Government to fund the fight against climate change in developing countries. The report identified opportunities for financing energy efficiency, transportation and carbon capture and storage investments to improve climate mitigations.

Dr Jones produced a set of principles for investment as part of the Capital Markets Climate Initiative, which aim to guide policymakers globally to use public policy and resources to mobilise “the estimated \$1 trillion global incremental investment per year by 2030 that is required to meet the climate change and energy opportunities and challenges”.

The report included a draft policy scoresheet and principles, and was to inform bilateral negotiations with India and Kenya. Dr Jones later advised on International Climate Finance, the UK government support to developing countries fighting climate change.

Managing risk

The risk research strand identified significant potential impacts to pension funds from climate change – for example, in one scenario a 1% reduction in economic growth due to climate change resulted in the total in zero asset value of defined benefit pension funds after 35 years, while the water project identified a risk of 5.7% increases in utility costs.

The research benefited actuarial and insurance stakeholders and utilities companies by prompting greater discussion and awareness of climate-related risk exposures. This included [reporting](#) for the Actuarial Profession.

Making predictions

The research has supported credit rating analysis of energy and water utilities by Standard & Poor's. The research also yielded a report for The Institute and Faculty of Actuaries (“[Resource constraints: sharing a finite world Implications of Limits to Growth for the Actuarial Profession](#)” (PDF)). This contributed to the creation of boards and resource groups in the UK and USA actuarial professional bodies to build on the actuary report and engage with private and public sector players.

Additionally, Dr Jones and Dr Monasterolo developed the [Global Resource Observatory](#) database which provides open source data and models scenarios on resource scarcity, political stability and economic growth.

Further reading

- [Delivery options for the International Climate Fund](#) – a report forming one of the research benefits
- The [CMCI principles report](#) (Jones 2012) CMCI principles report (Jones 2012)
- [Reuters coverage](#) of the research findings on water scarcity and knock-on impacts on prices
- [More about actuaries and climate change, from The Guardian](#)