# The Cambridge Forum for Sustainability and the Environment

## Risk, Resilience and Response: Cities

### 16th February 2016: Building up a Picture

## Research gaps

This forum examined the link between risk and sustainability. Insurance frameworks pertaining to risk were posited as a means to create coherence between financial, legal and political structures, underpinned by a scientific analysis. The forum also considered how our understanding of the environment affects human rights.

Rowan Douglas initially praised the work of various Cambridge groups (CSaP, CISL and CRS) and emphasised the role of Cambridge University in continuing to bridge the gap between academia and the wider world. The reinsurance industry has gone from relative ruin to relative resilience as a result of smarter capital, scientific revolution—including catastrophe risk modelling—and public policy revolution. It now caters for a 1 in 200 year risk. Rowan contends that sustainability and resilience should be looked at through this prism of risk and that desirable aims can be attained through better management of risk. As such, there must be a coherent framework for managing risk, which must link science, finance, law and public policy.

Dr Emily Shuckburgh discussed the challenges the scientific community faces in order to provide the evidence needed to support resilience, particularly in relation to weather and climate events. Only 10–20% of public sector climate finance is spent on adaptation rather than mitigation measures. This is caused by gaps in finance, technology, knowledge and will. There are four areas for improvement to support resilience. First, there is a need to gather and process more data, particularly that which is local and impact relevant. Second, the metrics for risk, mitigation and adaptation must be revaluated. Third, instruments that account for uncertainty in decision-making must be found. Finally, the interface between science and legal and political decision makers needs greater scrutiny.

Rowan also spoke briefly on behalf of Dr Ana Gonzalez Peleaz. Despite uncertainty, we have a reasonable understanding of environmental and climate risks. The Human Rights Council asserts that natural disasters only become disasters as a result of human action leading to exposure and vulnerability. Also, groups such as the UN and OECD have led globally to ensure that governments and businesses become legally responsible for failures to protect human rights in the face of climate risks. By extension, natural disaster risk resilience should become a human rights issue for the public and private sectors.

## Wicked problems and questions generated by the open discussion:

**Is the '1 in 200 years' criterion for insurance always appropriate?** Such a criterion may overlook large, rare risks. For insurers, 1 in 200 years represents a minimum capital requirement but most companies will consider longer-term risks. Although the insurance industry has found this metric useful, society has to decide on what is appropriate as a minimum standard of resilience in different contexts (e.g., for insurance, New Zealand has now increased its standard to 1 in 1,000 years). A minimum requirement may force organisations to assess and disclose their risks and hold contingent capital or resources and promote conversation about managing extremes.

**Is climate change currently too difficult for society to manage?** How do you engage communities that are not directly affected by disaster? Perhaps an improved understanding and disclosure of risk will help people make informed decisions.

**How do we manage uncertainty?** In creating a coherent framework how do you deal with techno-scientific risks which may be new and qualitatively different than previously categorised risks or more abstract challenges like the threat to biodiversity or mental health issues in society? Furthermore, **how do we build resilient systems without knowing the exact risk?** Is there a danger that by having metrics you neglect

areas that are less quantifiable? Often assessment gets reduced to a cost benefit analysis which can overlook things that cannot be easily valued. **How can you insure something when its scale or value is not yet known?** In part, the insurance industry always attempts to value any risk regardless of the knowledge base (guessing rather than ignoring if necessary), and one proposed solution is to do more work in valuing and legislating protection for our more abstract assets such as ecosystem services. A focus on exposure to loss rather than the actual hazard also mitigates some of this uncertainty. Creating coherency with regard to our language and frameworks and incorporating them into legal, financial and other major human systems is crucial. Ideally this would include open platforms for modelling being made available to the wider community.

**Are we capable of handling complex data?** We can often take steps to simplify our data to give global conclusions (such as average temperature), but for creating adequate response frameworks you need more local information which increases the need for data and managing uncertainty. Machine learning may help in this regard but it is not at the stage where it can replace judgement, policy and meaning abstraction.

**What is the exact relationship between risk, the government and the individual?** Is there a danger that our current situation creates a narrative whereby the government acts as 'hero' protecting the individual in need of rescuing, thus negating individual responsibility?

**Should we be using a utilitarian framework to value our future?** There are different ethical theories which could influence how we would understand and value human benefit and wellbeing. Risk, resilience and sustainability are all concepts that garner meaning from ethical and political choices. Can such terms be considered purely technical when different people will imagine and accept different futures and risks?

## Witness profiles

**Rowan Douglas**
CEO, Capital Science & Policy Practice and Chairman, Willis Research Network, Willis Group

Rowan leads the Capital, Science and Policy Practice at Willis Group which confronts large-scale challenges of risk, resilience and sustainable growth at global and local scales. He founded the Willis Research Network in 2006 which is now the world's largest collaboration between public science and the finance sector. Rowan also chaired the UN International Strategy for Disaster Reduction Private and Financial Sector Working Group which prepared the second UN Hyogo Framework for Action Agreement in 2015 as well as the World Meteorological Organisation Expert Advisory Group on Financial Risk Transfer.

**Dr Emily Shuckburgh**
Head of Open Oceans, British Antarctic Survey (BAS)

Aside from her work for BAS, Emily is a fellow of Darwin College, University of Cambridge, and she is currently on part time secondment to the UK Government's Department of Energy and Climate Change. Her research focuses on gaining a better understanding of the dynamics of the atmosphere and oceans to improve predictions of future climate change. She uses a combination of theoretical studies, numerical modelling and analysis of observational data. She is also an associate of the Cambridge Centre for Climate Change Mitigation Research.

e-mail: emsh@bas.ac.uk

**Dr Ana Gonzalez Pelaez**
Fellow at the Cambridge Institute for Sustainability Leadership (CISL), University of Cambridge

Ana's work addresses the political economy of basic rights and the primary institutions of international society such as sovereignty, the market and human rights. She has direct involvement with international reform processes including the evolution of financial regulation towards disaster resilience requirements and the role of insurance as an institution of international society; the renewal of the UN Hyogo Framework for Action on Disaster Risk Reduction; related to the 2015 UN Development Goals; climate process; and the World Humanitarian Summit 2016. Ana has advised on human rights and trade reform in the Middle East and worked for Bloomberg as an editor, producer and news anchor.