How are own views of natural hazard risk *actually* formed and used?

(i.e. how is environmental science is used to make key decisions?)

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THROUGHOUT

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AIMS

- **Enlighten us all on how own views of risk are in reality formed and used throughout (re)insurance,** and how implementation pragmatically relates to e.g. (i) seniority/magnitude of decision (ii) time-scale required of decision making (iii) stakeholder group (e.g. underwriter, CFO).

- **Produce data to contribute to a paper/report** (first access to initial results for participants)

QUESTIONS

1. *Where* (i.e. in what organization?) are key decisions made within (re)insurance using environmental science?

2. *Which* decisions are the most important or material (i.e. what are the key decisions?)

3. *How* decisions are made? (i.e. what is the assessment or thought process).

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Understanding how views of natural hazard risk are *actually* formed and used is useful because ....

1. *Government Funding:* You will provide evidence to direct future funding (e.g. IRIP £2-5 million) being considered by NERC (i.e. government), potentially unlocking new data/resource. They need evidence to make a case for it.

2. *Identify opportunities*: Areas likely to benefit from sharing of best practice will be identified, highlighting where technical capabilities might be readily improved whilst reducing/sharing costs. Participants will get first access to initial results.

3. *Practical hints and tips*: By collating vignettes of practice, everyone might discover a useful idea or two.

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Workshop Team

John Hillier (Loughborough University): NERC KE Fellow and environmental scientist, who has worked for Zurich Plc.

Matt Foote (Argo Global)

Andreas Tsanakas (CASS Business School): Actuarial scientist, with City experience.

John Wardman (XLCatlin)

Cameron Brown (Loughborough University)

STRUCTURE OF SESSION

- **Activity 1**: Participants' background and overview [10 mins]

- **Activity 2**: Mapping the organizational landscape. [15 mins]

- **Activity 3**: Mapping the functional landscape. [15 mins]

- **State of the science**: UK flood-wind interaction. [15 mins]

- **Activity 4**: Vignettes on how decisions are made [25 mins]

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Participant information summary

(A requirement of ethics protocols ....)

- Information that you provide today will be used solely for the project, securely stored, anonymised during analysis.
- All personal data will be erased or destroyed upon completion of the project
- The study will be published in a peer-reviewed journal, reports and possibly other outputs.
- You are under no obligation to participate and may leave at any time, although once your data have been analysed it will be impossible for me to remove your contribution from the work.

STRUCTURE OF SESSION

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Activity 1 : Participants' background and overview

(1) Who are you ?

(2) Quick fire overview for question: How are decisions made? (Q3)

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Activity 1 : Participants' background and overview

- Use your own judgement on how to interpret the words used in the questions, but do also feel free to ask any of us!

- If you think a question is irrelevant, please put a line through it to show you haven't just forgotten to answer it.

- Including 'key information' will help us with the analysis

- We are after your impressions of decision making, so whatever you think is valid!

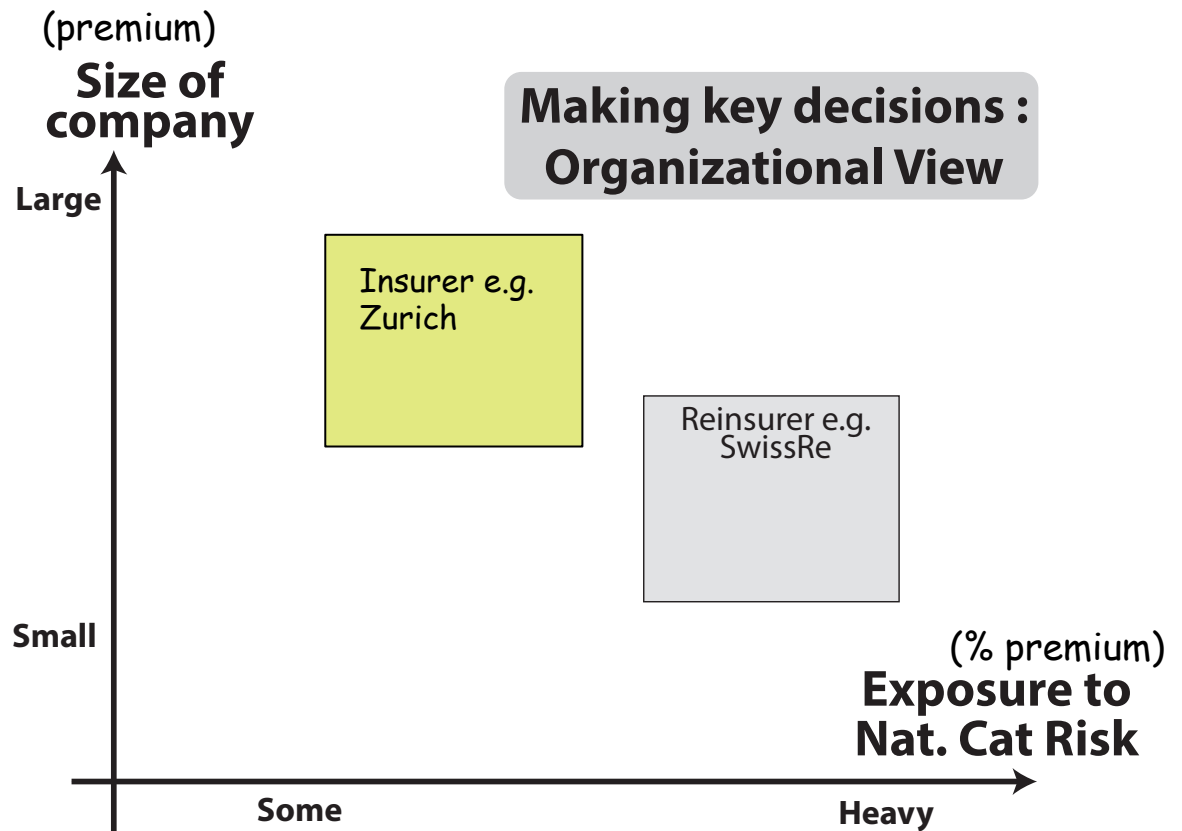**4. An example of a decision where science dominates**

Key information: Orgainzation type, size, level of Nat. Cat. exposure, seniority

5. An example a decision where other concerns predominate

Key information: Orgainzation type, size, level of Nat. Cat. exposure, seniority

10 mins !

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Activity 2: Organizational Landscape

Making key decisions : Organizational View

(premium)
Size of company

Large

Insurer e.g. Zurich

Reinsurer e.g. SwissRe

Small

(% premium)
Exposure to Nat. Cat Risk

Some

Heavy

- *Where* (i.e. in what organization?) are key decisions made within insurance <u>using environmental science</u>, and how does this relate to *how* decisions are made? (Q1&3)

- **Interest**: e.g. if you're trying to sell advice, or contextulaize your own practice

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Activity 2: Organizational Landscape

- It's critical that you restrict yourself to organizations that you are familiar with i.e. data are 'from experience'.

- That is, you have had sufficient contact with (e.g. employee, client, or strong informal contact) the past 5 years to be able to offer evidence not speculation.

- Please be honest; don't just put the 'we do it best' answer next to your companies ..... none of this is traceable back to you, and we're after what really happens!

- These are *your perceptions* so there are no wrong answers!
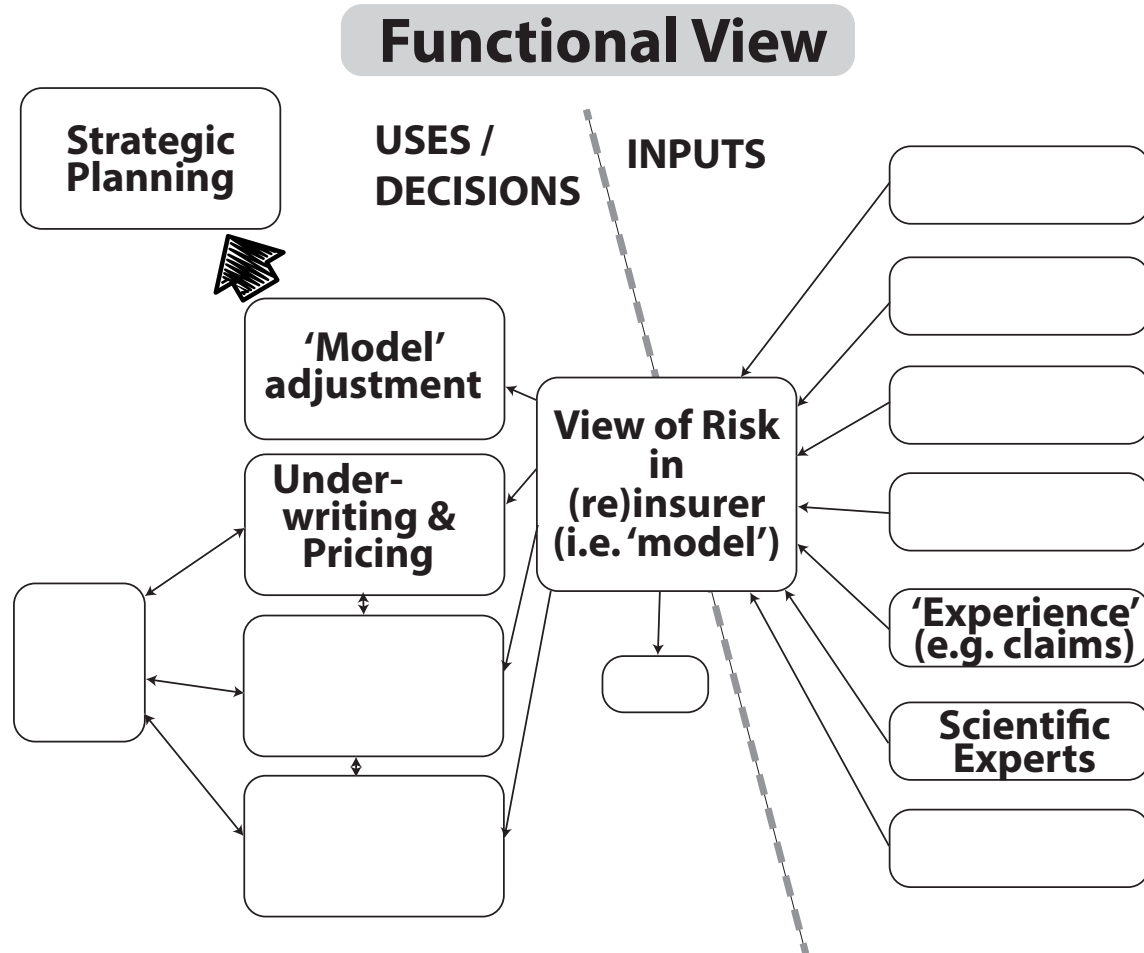
15 mins !

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Activity 2: Organizational Landscape

1. Populate the grid with some **firms that hold risk** to get a feel for the 'landscape' **[4 mins]**.

2. Produce a 'heat map' of where, in aggregate, the most material decision-making goes on. **[4 mins]**.

3. Produce maps of the influence of scientific input in decision-making **[4 mins]**.

- Direct Science [Direct engagement with scientists/in-house research publishable in peer-review journals]

- Indirect Science [use of cat models, inputs from translators e.g. brokers, consultants]

- Science not primary [claims experience, 'gut feel', personal judgement on past business experience]

A   B   C
Limited   Dominant

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Activity 3: Functional Landscape

Functional View

Strategic Planning

USES / DECISIONS   INPUTS

'Model' adjustment

Under-writing & Pricing

View of Risk in (re)insurer (i.e. 'model')

'Experience' (e.g. claims)

Scientific Experts

15 mins !

- *Which* decisions are the most important or material (i.e. what are the key decisions?), and how does this relate to *how* decisions are made. (i.e. research Q2 & Q3)

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Activity 3: Functional Landscape

- Comment on what you are familiar with.

- That is, you have had sufficient contact with (e.g. employee, client, or strong informal contact) the past 5 years to be able to offer evidence.

- Please be honest; we don't want the 'we do it best'/textbook answer!

- These are *your perceptions* so there are no wrong answers!

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Activity 3: Functional Landscape

1. Map relative influence of inputs to decision making **[3 mins]**.

2. Produce a 'heat map' of where, in aggregate, the most material decision-making goes on. **[3 mins]**.

3. Produce a map of the influence of scientific input in decision-making **[6 mins]**.

   - Direct Science
   - Indirect Science
   - Science not primary

A   B   C

Limited   Dominant

Seniority of decision maker   **1** = Analyst, **2** = Team Leader, **3** = Senior Manager, **4** = CEO/board

Time-scale to make decision   (**h**ours / **d**ays / **w**eeks / **m**onths)

Examples: $C_{,1,w}$ A,3,d