

End-user perceptions and use of natural hazard risk modelling within New Zealand local government.

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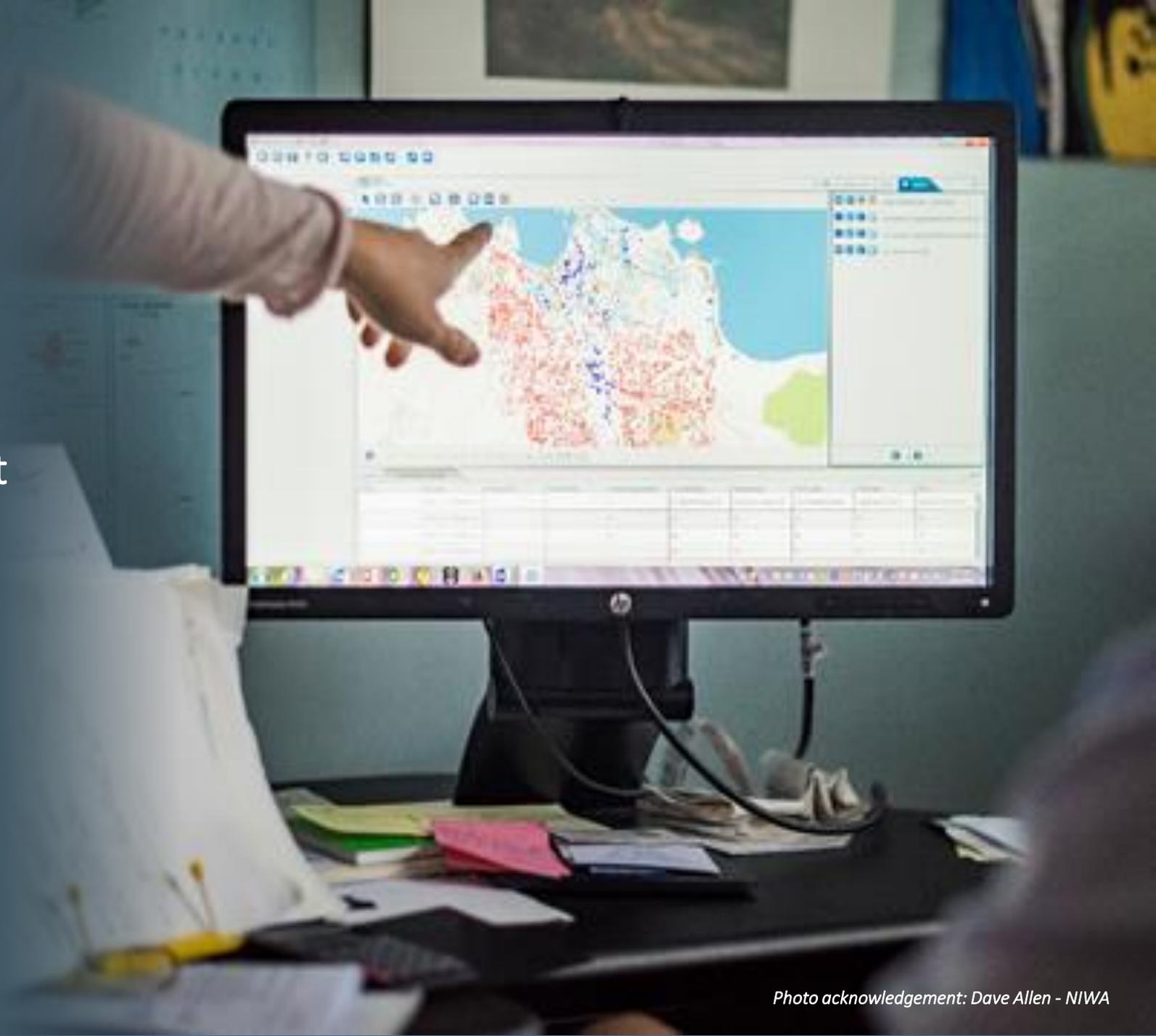
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Overview:

- My PhD research
- Risk Modelling
- Natural Hazard Management
- Study Area and Methods
- Results
- Discussion
- Recommendations



PhD Research:

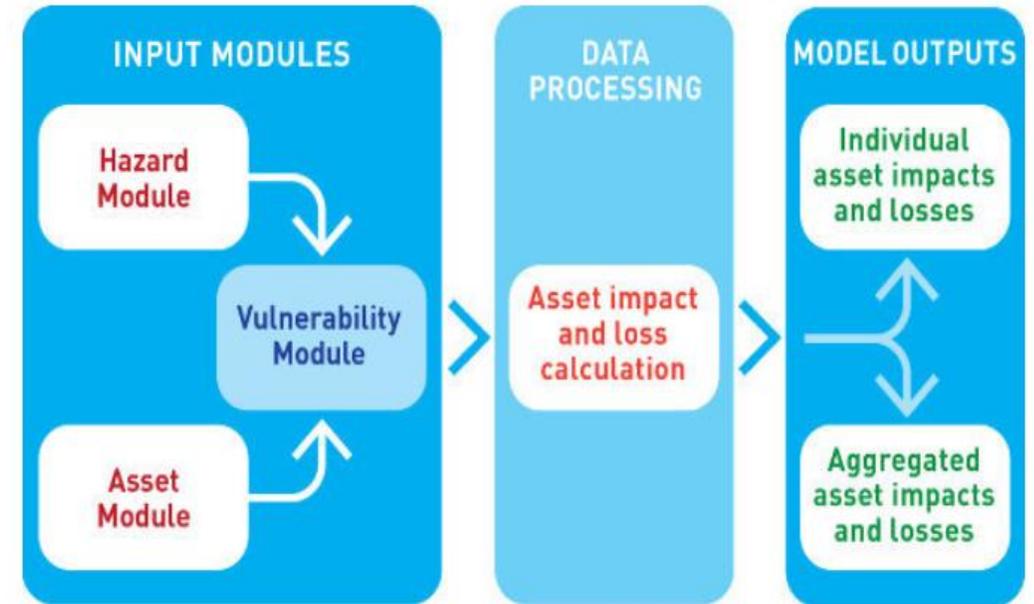
How Risk Informs Natural Hazard Management: A study of the interface between risk modelling for tsunami inundation and local government policies and procedures.

1. How is risk communicated, perceived, and acted upon by government bodies?
2. How is risk modelling informed by natural hazard management?
3. How are natural hazard management policies and procedures informed by risk modelling?
4. What are the risk communication barriers and enablers that limit or contribute to, efficacy for risk management for Local Government?
5. What link do these limiting (or contributing) factors have with natural hazard management policy and procedures, and how can those policies and procedures be developed to enhance enablers and overcome barriers?

Risk Modelling (RiskScape):

The aims for RiskScape is to assist councils in developing natural hazard risk management policy and procedure as well as in responding to actual events (King & Bell, 2009).

To date the literature on how stakeholders perceive the usability of risk models is limited. (Komendantova et al., 2014)



Source: RiskScape model framework. <https://riscscape.niwa.co.nz/how-it-works>.
08/06/16

Natural hazard management in NZ local government:

Natural hazard management sits within a complex legislative environment, that requires the many players to work together in a coordinated way, and consists of high level and widely interpretative policy guidance.

(LGNZ, 2014)

While it is intended that functions for natural hazard management work seamlessly together, it is shown that over time, integration remains limited, resulting in different risk perceptions and reduced effectiveness.

(Becker and Johnston, 2000; Ericksen et al. 2004; Glavovic et al, 2010; LGNZ, 2014; Saunders et al., 2014; Saunders et al., 2015; Basher, 2016; Kilvington & Saunders, 2016; Crawford et al., 2018; Lawrence, 2018)

Study Area:

1. Bay of Plenty Region
2. Gisborne Region
3. Hawke's Bay Region
4. Wellington Region
5. Nelson / Tasman Region
6. Canterbury Region



Methods:

- Qualitative
- Semi structured
- Focus group sessions
- 1:1 Interviews

- Thematic Analysis

...how natural hazard risk management policy works in that
...experiences on how natural hazard risk management policy works in that
...policy is developed
...is applied
...mandate for natural hazard risk management
...governance environment/mandate for policy development
...used policy
...of risk modelling software:
...it changes the way participants perceive natural hazard risk.
...it is better at creating efficacy for developing more risk informed policy and
...participants think are the barriers for the communication, perception, and efficacy for
...natural hazard risk.
...participants think are the enablers for the communication, perception, and efficacy for
...natural hazard risk.

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Focus Group Session Guide

Understanding information management:

- How is this group linked with other departments and wider natural hazard management within the council?
- How do you communicate risk and hazard information and make decisions council?
- What information do you use?
- Where does it come from?
- Do you create or provide your own information?
- How would you like to receive or share risk and hazard information?

Discussion based on examples:

- Do you have any examples of risk-informed decision-making or response? What terms of information requirements?
- What information was missing or what were the information gaps?

Results:

We find that risk modelling is:

- valued and used by strategic policy makers;
- less valued within operational land use consent planning and not as widely used, and
- valued within operational emergency management but not as widely used.

Results - Valued and used by strategic policy makers:

“If we get a handle on the scale of what is at risk, it is always valuable for policy development”.

“I want to have something to support me if I’m in a hearing in Environment Court ... to show that these areas are at risk”.

“Modelling produces a visual, spatial map output and if there is one thing I know from many years of talking to the community and councils and people is that they can relate to any visual-graphic representation of something people can see. So they’re hugely powerful tools for communicating risk and impact and disaster risk reduction”.

Results - Less valued within operational land use consent planning and not as widely used:

“That's the problem - sophisticated spreadsheets and sophisticated modelling have never been a strong point in [consents] planning”.

“People are stretched with their workloads and probably find it difficult to develop a new area”.

“Some of them know about [risk modelling], but I think it just hasn't hit the point where people see it as a valuable tool as far as how they make decisions”.

“Maybe the software approach is just too much effort, with too little flexibility, to be of value on the day.”

Results - Valued within operational emergency management but not as widely used:

“It would be very powerful for [emergency] planning, through knowing what the potential impacts would be, in other words, what is the end game? If something happens, what’s it going to look like? Then we can go back to the start and say this is our future recovery planning that we are going to have to think about”.

“I think the challenge is for [emergency management] to be out of the box all the time and actually be working with other parts of local authorities.”

“[The data] was never really designed for [emergency management]. We can use it ... as long as the data is available.”

Discussion:

So why is this the case and what does this mean?

- This is a think piece, so here are our thoughts...
- Please feel free to contribute your own thoughts

The Riddler (John Astin, c. 1960's)

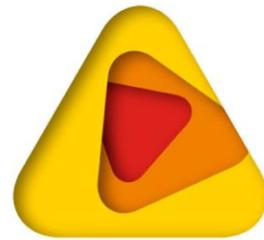


Recommendations:

- Structured collaboration for natural hazard risk management (Doyle & Paton, 2017).
- Participatory co-development of risk modelling (Newman et al., 2017).
- Regular risk management workshops (Saunders & Beban, 2012).
- Data development

Thanks to:

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