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HOW RISK INFORMS NATURAL HAZARD MANAGEMENT:

A STUDY OF THE INTERFACE BETWEEN RISK MODELLING FOR
TSUNAMI INUNDATION AND LOCAL GOVERNMENT POLICIES
AND PROCEDURES

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OUTLINE

- The challenge and the question
- Risk and risk modelling
- Methods
- Results
- Recap



THE CHALLENGE AND THE QUESTION

- 10 year average cost of natural disasters is \$255 billion per year (Newman, et al., 2017)¹
- The benefit-cost ratio for risk reduction ranges from 1:1 to 60:1 (Shreve & Kelman, 2014)²
- Tsunami risk is a severe natural hazard risk to NZ (Gill, 2015)³
- Natural hazard policy and procedure in New Zealand does not reflect the risks (LGNZ, 2014)⁴

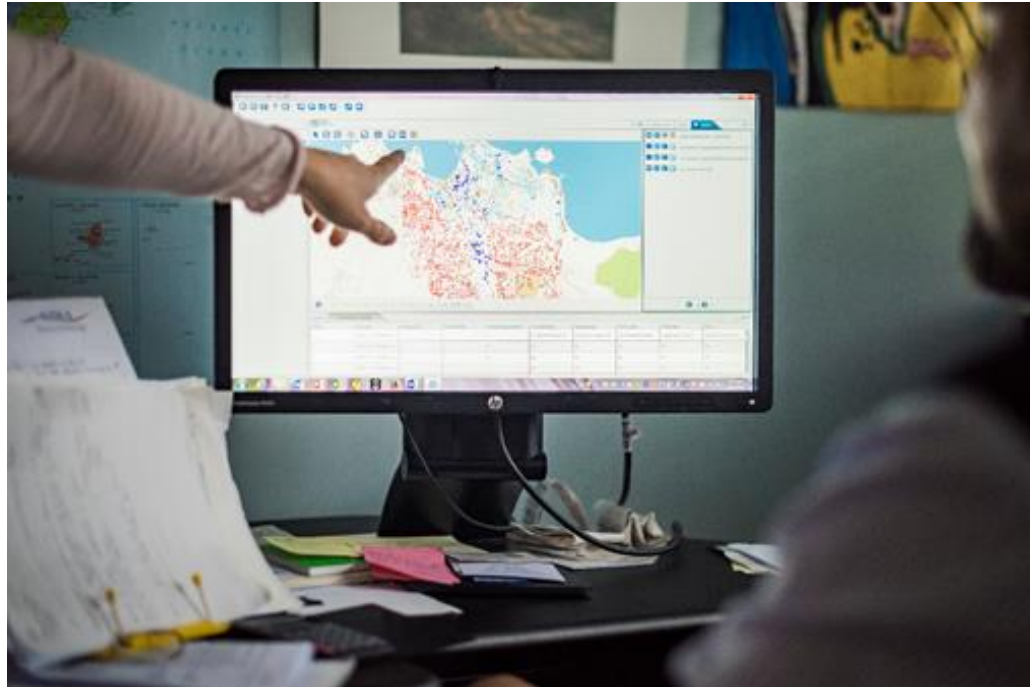
- Why?
- Would risk modelling help?

Risk = Hazard (likelihood) × Consequence

(Consequence = Exposure × Vulnerability)



RISK MODELLING



Source: Dave Allen - NIWA

geom	Unknown	Not Exposed	Exposed
TIPOLYGON (((2035200.3254000004...	0	1157	272
TIPOLYGON (((2033462.8059999999...	0	0	13
TIPOLYGON (((2030456.0813999996...	0	429	0
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TIPOLYGON (((2020569.034 571121...	0	419	0
TIPOLYGON (((2036549.0784 57325...	0	546	0
TIPOLYGON (((2008296.3131 57291...	0	131	0
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METHODS

- Risk is a social construction
- Qualitative methodology
- Purposive sampling of local government natural hazard management roles
- Following a participatory Action Research (PAR) approach (cyclic process to effect change)
- Methods are focus groups, one-one qualitative interviews, document analysis, and workshops.

RESULTS

- Where the barriers to risk communication, perception, and willingness to engage in risk management lay
- How the use of risk modelling can overcome those barriers
- If the use of risk modelling can contribute to improved local government policy and procedures for tsunami risk management

RECAP

- Tsunami is a severe natural hazard risk in NZ (and Australia) and there many challenges for its communication, perception, and willingness to engage in risk management
- Risk modelling is a useful communication tool for local government but it still has a long way to go
- Risk modelling can contribute to improved policy and procedure in local government. However before this can happen, it needs greater legislated mandate for natural hazard risk management, more quality hazard data, and better risk models.

QUESTIONS ?

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