

# CAN WE BETTER UNDERSTAND HOW SCIENTIFIC KNOWLEDGES WORK IN RISK MITIGATION THROUGH SCENARIO EXERCISES?



JOSH WODAK<sup>1</sup>, TIMOTHY NEALE<sup>1</sup>

<sup>1</sup> INSTITUTE FOR CULTURE AND SOCIETY | UNIVERSITY OF WESTERN SYDNEY, NSW

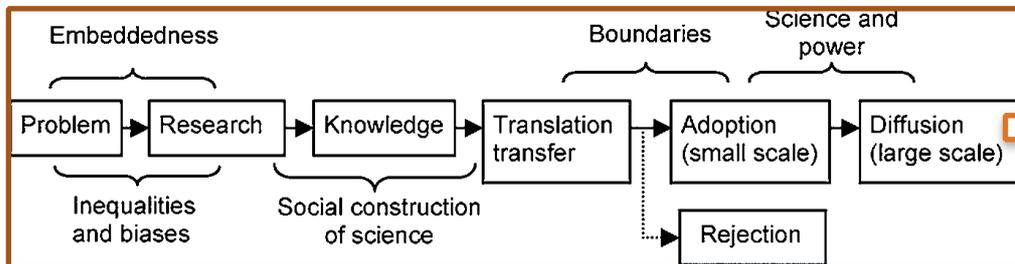
## SCIENTIFIC DIVERSITY, SCIENTIFIC UNCERTAINTY AND RISK MITIGATION POLICY AND PLANNING

### THE PROBLEM

New public policy positions for bushfire and flood risk rely on best practice scientific evidence. However, scientific studies are fragmented, highly specialised, constantly evolving, and span diverse disciplinary approaches. This project focuses on how a better understanding of the role of science in decision-making will help industry articulate and defend decisions to the community, media, inquiries and elsewhere, and, better frame information and advice on how scientists and professionals communicate.

### RESEARCH QUESTIONS:

1. How do policy makers, practitioners, courts, inquiries and the community differentiate, understand and use scientific knowledge in relation to bushfire and flood risk?
2. How are diverse knowledges ordered and judged as salient, credible and authoritative by these different actors?
3. How might **scenario exercises** be used for understanding risk mitigation decision-making?



Kerckhoff and Lebel's diagram (left) of the 'transfer and translate' model of scientific knowledge in policy and planning makes clear how insights into the 'knowledge' step can be transformative.<sup>1</sup>

### KEY SCENARIO LITERATURE:

'[In] the risk management field the use of scenarios (as a tool) and scenario planning (as a methodological approach) has become a common way to assess and deal with risk in all of its myriad forms. Most basically, scenarios are used to talk about possible future events (risks) in the present and to help prepare for them'.<sup>2</sup>

'Forecasting and modelling methods work with what is known and what is unknown... In contrast, **scenarios can help us to work with different kinds of knowledge**, ignorance and uncertainty, for example, socially constructed ignorance or 'uncomfortable knowledge', i.e. what others know about but cannot be known here/by us/in this country/organization.'<sup>3</sup>

**In short, scenarios can be used both to assess risk and to help us understand how risk is assessed.**

"Translating risk science into a digestible form for practitioners and the community is only one part of making it intelligible. Scenario exercises are a sound means of demonstrating how this knowledge can be applied in practice" - **John Schauble**, Emergency Management Victoria, Cluster Lead User

### REFLECTIONS ON LITERATURE REVIEW:

Scenario exercises (SEs) may enable us to model possible futures or, alternately, they may enable us to 'see the present situation more clearly'.<sup>4</sup> The project's literature review on SEs has provided several key insights about their relevance to its research.

- The 'Actor-focused' or 'Reflexive Interventionist/Multi-Agent-Based' (RIMA) type of SE is the most appropriate. These aim to understand and maintain different knowledges rather than produce a single 'consensus'.
- Such SEs may potentially afford both extensive opportunities for participant engagement and ownership, as well as insights into diverse decision-making processes.
- The literature suggests SEs are most successful when they are credible, salient, legitimate, and creative in the view of participants.

These insights will prove crucial to the design of this project's methodology.

<sup>1</sup> Lorrae van Kerckhoff and Louis Lebel. 2006. "Linking Knowledge and Action for Sustainable Development." *Annual Review of Environment and Resources* no. 31 (1):445-477.

<sup>2</sup> Myriam Dunn Cavelty et al., "Using Scenarios to Assess Risks: Examining Trends in the Public Sector," in *Focal Report 5 (Crisis and Risk Network, Center for Security Studies, ETH Zürich, 2011)*, 6.

<sup>3</sup> Angela Wilkinson and Esther Eidinow, "Evolving Practices in Environmental Scenarios: A New Scenario Typology," *Environmental Research Letters* 3, no. 4 (2008): 3.

<sup>4</sup> Ibid.



Australian National University

For more information on this project go to the Bushfires & Natural Hazards CRC website at [www.bnhcrc.com.au](http://www.bnhcrc.com.au)  
Timothy Neale (Primary Investigator): [t.neale@uws.edu.au](mailto:t.neale@uws.edu.au)  
Jessica Weir (Project Leader): [j.weir@uws.edu.au](mailto:j.weir@uws.edu.au)