THE SOCIAL LIFE OF SCIENCE IN NATURAL HAZARDS POLICY AND PLANNING: OPPORTUNITIES AND CHALLENGES

bushfire&natural HAZARDS CRC

Timothy Neale[1] and Jessica K. Weir[2,3]
[1] Alfred Deakin Institute for Citizenship and Globalisation, Deakin University, VIC [2] Institute for Culture and Society, Western Sydney University, NSW [3] Fenner School of Environment and Society, Australian National University, ACT

TWO CASE STUDIES FROM THE NORTH AND SOUTH OF AUSTRALIA EXAMINE HOW SCIENCE IS BEING USED TO CHANGE HOW WE ANTICIPATE AND MITIGATE NATURAL HAZARDS ILLUSTRATE SOME COMMON OPPORTUNITIES AND CHALLENGES.

What's happened: project researchers chose to look at contexts where recent scientific research had been used to *change* mitigation policy and practice. For each we: 1) interviewed practitioners multiple times; 2) surveyed practitioners; and, 3) held a scenario exercise. The table below presents a synthesis of common themes across our two case studies to date:

How practitioners use science and other knowledge in risk mitigation

Making things count:
what is counted and countable is crucial in speaking 'up,' 'in' and 'out' to policymakers, practitioners and publics (who each have ideas about 'what counts')

Non-scientific knowledge:
professional and personal knowledge is vital is risk mitigation; particularly for anticipating and managing large uncertainties (i.e. community vulnerabilities, human behaviour, hazard behaviour at micro-scale)

Extension and coproduction:
many practitioners use scientific research and tools to create awareness and/or involve communities, institutions and agencies in their planning

What we mean by 'science':
there are always multiple types of science at work in risk mitigation, but 'scientific' is often used as synonym for true; in fact, everyday scientific knowledge, 'new science,' legacy science are all present and useful in policy and practice

Opportunities and challenges in policy, practice and governance of risk mitigation

Explicit numbers create *new* questions:
what to do with the uncountable values and assets? What counts most and why? How much data dissemination is 'enough'? What is the most convincing data for each audience (e.g. financial, social, ecological, etc.)?

Relation between scientific and other knowledge:
different ways of knowing can be both adversarial and complimentary; inherited ideas can support the organisational conservatism that typifies many agencies; scientific approach may be less effective than 'what works'; practitioners often encounter residual skepticism about new knowledge

Authoritative quality of science and expertise:
'outsiders' (e.g. researchers, other agencies, retired practitioners) and relationships with agencies are very important to utilisation and extension; agencies have to cede authority to involve others while keeping responsibility (and potential blame!)

Prioritising and valuing different sciences:
enthusiasm for 'science' creates leverage for change; also creates frustration for practitioners and others when policy and practice do not move with scientific discovery; legacy science can be invisible

Examples:

Barwon-Otway case study: is it 'better 'to calculate risk to spatially discrete things (e.g. houses) based on their economic value, occupancy… or something else?

Greater Darwin case study: practitioners differ in ideas about situations where experience is a *sufficient* basis for decision-making and when it is a hindrance.

Greater Darwin case study: *externality* of research into gamba grass effects on bushfire risk and costs was crucial to convincing people within government.

Barwon-Otway case study: are FFID or FDR 'science' or everyday knowledge? Was the previous policy goal of burning 5% of public lands not 'scientific'?

So what?

This research project will provide insight into the opportunities and challenges of using science in policy and practice. In doing so, it will provided an improved understanding of **scientific integration pathways** and an improved basis for **articulating and defending science-based decision-making** in natural hazard risk mitigation.

What's next?

Project researchers will complete a **third case study** to generate insights into the opportunities and challenges of using scientific knowledge and managing scientific uncertainty in both flood and bushfire risk mitigation. Stay tuned!

To find out more, visit the project on the BNHCRC website or see: Neale T, Weir JK and Dovers S. (2016) Science in Motion: integrating scientific knowledge into bushfire risk mitigation in southwest Victoria. *AJEM* 31: 13-17.