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**Author:**                **Karyn Bosomworth; John Handmer**

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# Climate change adaptation, disaster risk reduction and a fire management policy framework

**Karyn Bosomworth<sup>1</sup> and John Handmer**

Centre for Risk and Community Safety, RMIT University, Victoria  
Bushfire CRC

## **Abstract**

Disaster risk reduction and sustainability are major imperatives for fire management. Now, fire management must also consider climate change. Viewed holistically, the sector is very large, with links into many policy issues. Its governance and policy framework must therefore be both integrated and adaptive. This relies on collaboration and institutional learning. Collaboration and learning are social processes. In a public policy context they depend on relations between public policy actors. Policy is shaped by organisational structures, institutional settings, and by informal networks that are in turn the products of values and expectations –socio-politics. Yet, research and practice tend to focus on organisational structures or formal arrangements. Less considered are the relationships between policy actors, and the institutional settings and socio-politics that influence and are influenced by their networks. Learning and collaboration between the sector’s public policy actors likely depend (to an uncertain extent) on formal *and* informal networks between policy actors. It is not enough to just describe how “well-connected” a policy sector may be. The sectors socio-politics and how informal networks influence and are influenced by those contexts are also important. This research seeks to understand the significance of all this in enabling integrated, adaptive governance of fire management.

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<sup>1</sup> Corresponding author: k.bosomworth@student.rmit.edu.au

## Introduction

Disaster risk reduction (DRR) and sustainability are major imperatives for fire management. Now, fire management must also consider climate change. Climate change will not only impact fire weather. Underlying factors that affect the vulnerabilities and resilience of our social *and* ecological systems will influence how those impacts may manifest and may be the major contributors to changes in damages. Addressing factors that affect vulnerability through building capacity and resilience is an objective common to DRR, sustainability and climate change adaptation. For fire management, this is a major challenge. Viewed holistically, the fire management sector is very large, with links to many public policy issues. It is not a new idea to say that the sector must therefore work in an integrated manner with this range of issues. In doing so, fire management's overall governance and policy framework must be able to cope with the uncertainties, change and dynamics inherent in emergency management, the interdependencies of social-ecological systems and local manifestations of climate change. In short, the governance and policy framework of fire management must be both integrated and adaptive.

Arguably, integrated governance is enabled by genuine collaboration between stakeholders. Adaptive governance is enabled by learning. Not just "learning by doing" in localised experiments, but also by institutional learning - reflecting on assumptions, overall policy objectives, and even organisational or sectoral purpose. Collaboration and learning are social processes. In a public policy context they depend on social relations between public policy actors. These actors are pivotal in a sector's governance because they co-ordinate a diversity of inputs from a variety of stakeholders, facilitate negotiation between these different values, and make (or at least support) management decisions. Policy is shaped by existing organisational structures, institutional settings, and by informal networks of communication that are in turn the products of values and expectations (Jordan and O'Riordan 2005). Yet, research and practice appear to be predominantly focussed on organisational structure or formal arrangements. Less considered are the relationships between these actors, and the institutional settings, the socio-politics that influence and are influenced by their networks. Our hypothesis is that learning and collaboration between the sector's public policy actors depends (to an uncertain extent) on formal *and* informal networks between those actors. It is not enough however, to just describe how "well-connected" a policy sector is at any one time. We need to also understand the sectors socio-politics and how informal networks influence and are influenced by those contexts. Most importantly, there is a need to understand the role of all this in enabling integrated, adaptive governance of a policy framework for fire management.

## **Research Approach**

We are using a number of techniques to examine the significance of socio-politics and informal networks for the sector's learning and collaborative capacity. The study's theoretical basis has been developed through an analysis and synthesis of the academic literature, infused with insights from interviews with fire management policy practitioners (policy actors). We are now testing this theoretical base via a survey and interviews with public policy actors. The online survey is aimed at obtaining a snapshot of some of the sector's informal networks. The second round of interviews aims to explore how informal networks interact with the sector's formal and informal institutions and its socio-politics. The techniques used are drawn from the policy and institutional analysis fields.

### **Integrated, adaptive governance: the importance of collaboration and learning**

Genuine collaboration between public policy actors is crucial in public policy sectors that require management of complex, interlinked social-ecological systems. No single organisation can hold, process, or comprehend the diversity and complexity of the information involved. In public policy sectors such as fire management, production and implementation of policy occurs among organisations that have no formal authority over one another. Each organisation has their own objectives, perspectives and needs, and each has a suite of personnel also with their own values and objectives. These perspectives have to be appreciated and worked with. Collaboration therefore is essential in accessing a diverse range of knowledge and information; and to enable debate, dissent and negotiation, particularly where different values are involved.

Learning in an adaptive, integrated governance sense refers to what is called social or institutional learning. Institutional learning means more than just gaining new information, or learning from localised experiments or mistakes in routines or even learning how to address political demands. Institutional learning is also about reflecting upon governing values and assumptions, questioning organisational or sectoral purpose, and even providing the political or governance 'space' in which institutional learning is actively encouraged.

### **Integrated, adaptive governance: Socio-political influences**

"Appealing as it sounds, adaptive management or governance has proven difficult to implement, particularly in complex institutional settings where management, research, and policy change involve collaboration among several agencies with complicated, overlapping historical responsibilities and legal mandates" (Walters 1997). Fire management is just such a situation. Examination of the literature clearly shows that socio-institutional and political issues, rather than lack of scientific knowledge, can constrain adaptive governance or management. Factors identified in the literature include poor policy integration, risk aversion, lack of collaboration or participation, conflicts between ecological values and utilitarian or 'human' values, limited knowledge and information sharing; and political risks outweighing the potential benefits of trying different

approaches. Interviewees in our first round of interviews with key fire management policy actors in Victoria, all raised these same issues as constraints on effective policy or governance of fire management.

Most research and practice aimed at integrated or adaptive fire management seems to focus on integrated structural arrangements, adaptive management at local scales, or integrating community participation. Less considered is the integrative and particularly adaptive capacity of the broader governance and the role of institutional (socio-political) contexts in enabling it. Governance is the process by which we craft institutional settings (Ostrom 2007). Institutional settings are a sector's formal and informal "rules", often influenced by and influencing its socio-politics. These "rules" dictate how policies are conceived, developed, implemented and even evaluated. Many approaches claim to be integrative, participatory and adaptive but there is a tendency for them to be more of the same (Keen *et al* 2005). Partnerships occur within traditional disciplinary or managerial enclaves; actions are hampered by old institutional and social arrangements; and visions are constrained by the values and ethics that created the problems initially (*ibid*). Even if actors acknowledge their interdependencies, institutional barriers, cognitive differences and the dynamics of the interactions themselves can block joint action (van Bueren, Klijn *et al.* 2003).

Fire management is governed via a number of organisations and policy sectors that are independent, with little to no authority over one another. These different groups are responsible for development, implementation and evaluation of different but often interacting policies and practices. Different organisations and the people within the organisations have different views on what these rules should be – a form of institutional uncertainty. Differing views (or frames) relate to what the policy problem actually is, what values and issues are to be considered, what (and whose) knowledge and information is to be considered, how that information is to be interpreted, and what solutions are desirable. Social-institutional and political issues are created by political and legal structures, but more so people's views and attitudes, including how choices will impact their (often perceived) gains or losses (Ref). It is probably naïve to think that people working in public administration do so without bringing any personal values or beliefs to that work. Patterns of interaction and outcomes depend on the relationships among governance actors at different levels and the problems they are addressing (Andersson and Ostrom 2008). Current fire management governance paradigms are a reflection (an outcome) of the values, influences, beliefs and norms of various policy actors/groups involved. This manifests itself right up to the fundamental question of the overall goal of fire management – what is it?

More research won't solve perception differences about starting points and values (van Bueren, Klijn *et al.* 2003). Therefore there is a need to better understand the sector's socio-political context, and how this context influences the sector's capacity to collaborate and learn – particular via networks.

## **Collaboration and learning: The role of informal policy networks**

There is a growing body of research that argues an adaptive capacity arises out of social [institutional] learning. Social learning depends on social-relations. From a policy perspective, learning and collaboration rely upon the social relations between public policy actors within relevant organisations. If integrated adaptive governance is desirable, then we need to understand how current institutional and governance contexts enable or hinder networks or connections between public policy actors and therefore policy learning and collaboration. Relationships outside of what is formally required may provide some space for public policy actors to more freely experiment, discuss ideas and experiences, and reflect and learn. When questioned about what facilitates policy and practice, every interviewee discussed the concept of “champions”. These champions were often described in terms of small, informal groups of people who shared similar values and insights, who were able to present a case for fundamental institutional or policy change when a “window of opportunity” presented itself. One of the best known example is perhaps the genesis of the “stay or go” approach in Victoria which followed the fires of Ash Wednesday 1983.

A typical response to the need for integration in particular, is an organisational or departmental re-structure. Some of the organisational literature begs caution for such approaches. Institutional design is an intervention that tries to change the institutional structure, to influence networks operating in a policy domain (Klijn and Koppenjan 2006). Institutional (re)design strategies threaten existing social capital, often created over years, and importantly, create uncertainty (van Buuren and Klijn 2006). Because once rules of networks are changed there is only a long and difficult way back if the interventions turn out to be undesirable (*ibid* 2006). Institutional (re)design may ignore fundamental questions of purpose (“what are we actually trying to achieve?”) and potentially also ignores what may already enable integration and adaptability – existing good working relationships. Institutional reform may [be better to] entail shoring up, affirming established relationships rather than simply replacing them with formal institutions (Helmke and Levitsky 2003). This requires some understanding of what social capital already exists within the sector. Social capital relies on the relationships that are meaningful for people, rather than formal, official relationships sanctioned by management (Pelling and High 2005). These relationships may play a significant role in providing space within which learning that enables adaptive capacity can occur.

For a sector to be integrated and able to share a diversity of knowledge and experience, the different institutions or coalitions need to be connected somehow. Horizontal and vertical connections that are built on trust would likely encourage collaboration and help public policy actors to learn from one another as well as from new information. The literature provides theoretical and applied arguments as to the influential importance of formal and informal institutions *and* policy networks on policy outcomes and governance (See for example: Scharpf 1997; Sabatier 1999; Helmke and Levitsky 2003, Pyke, Bierwagen *et. al.* 2007; Handmer and Dovers 2008). Institutions (and socio-politics) may foster or hinder formal and informal networks of communication and collaboration between agencies

and their policy actors. Therefore, institutions will also likely influence capacities for learning and collaboration; ultimately for an adaptive capacity. Where institutions may hinder a learning and collaborative capacity, informal networks may enable such capacities in spite of institutional constraints. Concurrently, actors are motivated by their beliefs, are likely structure their relationships into ‘advocacy coalitions’ and try to influence policy through multiple venues (Weible and Sabatier 2005).

For sectors like fire management, the challenge lies in enabling informal connections that support collaboration and a capacity for learning that is complementary to formal arrangements. A question is: how can organisations enable this without controlling informal networks, allowing them to evolve “naturally”, and not undermine principles of good governance. A start is to better understand the significance of informal networks for the governance of the fire management sector. Then to explore how interactions between these informal networks and the sectors socio-politics (informal and formal institutions) may foster or hinder the ability of public policy actors to collaborate, as well as collectively learn (institutional learning). Ultimately in this research, we aim to reflect on the role of informal networks in helping to realise adaptive, integrated governance of fire management.

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