

# Identifying and governing systemic risk

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# **A very brief overview of some of the issues**

- What is it?
- A comment on governance;
- Emergency management/disaster risk reduction and systemic risk;
- What can be done?



# What is it?

- **Systemic risk** refers to the chance of a breakdown of an entire **system** rather than simply the failure of individual parts. A risk that could cascade through a system or systems;
- **In DRR this represents a shift from a focus on individual hazards (or risks) to focus more on inter-connections and dependencies across risks and the components (eg vulnerabilities) of those risks – and (ideally) an understanding of the entire system;**
- Unfortunately, systemic risk tends to be emergent and not necessary obvious beforehand;

Some complex definitions:

- “Systemic risk - a risk that is endogenous to, or embedded in, a system that is not itself considered to be a risk and is therefore not generally tracked or managed, but which is understood through systems analysis to have a latent or cumulative risk potential to fundamentally impact overall system performance when some characteristics of the system change.” GAR
- “non-linear change in hazard intensity and frequency a reality, and now threatening all three dimensions of sustainable development,...’ GAR

# Implications?

- Past is probably not a good guide to future risk – “That assumption is now rendered obsolete on almost every frontier: by the sheer number of human beings, ...; by the changing climate; and by the dynamic and global connectedness of biological and physical worlds, individuals and communities.” (GAR2019) I would argue that our changing understanding of risk is more important.
- Greater uncertainty and complexity than recognised, with emergent tendencies. **Challenges traditional risk approaches with their focus on the detail of a well defined risk;**
- Supply chains, finance and livelihoods are obvious examples... in banking and finance the collapse of one company or part of a company that threatens the entire system...
- **Puerto Rico after Hurricane Maria 2017 – breakdown in electricity, (long delays in restoration), medical manufacturing stopped, worldwide shortage of intravenous bags (6x increase in price)** GAR2019, Ch 2;
- **Now this systemic nature is increasingly seen as an element – perhaps the main element – of disaster risk;** or by considering risk more broadly in line with the new publication on Hazards terminology coming from the Sendai Agreement. This could also include global existential threats.  
<https://council.science/publications/hazards/>



Illustration:  
The Effects of Good Government  
by A. Lorenzetti - Sala del Nove  
Siena, Italy (1338)

# 12

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1. Participation, Representation, Fair Conduct of Elections
2. Responsiveness
3. Efficiency and Effectiveness
4. Openness and Transparency
5. Rule of Law
6. Ethical Conduct
7. Competence and Capacity
8. Innovation and Openness to Change
9. Sustainability and Long-term Orientation
10. Sound Financial Management
11. Human Rights, Cultural Diversity and Social Cohesion
12. Accountability

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# Governance:

## Traditional views – for sectors:

- About making decisions in an inclusive, transparent and accountable manner, and is effective, efficient and adaptable (Council of Europe);
- *Disaster risk governance* – The system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate and oversee disaster risk reduction and related areas of policy. (Open-ended Intergovernmental Expert Working Group (OIEWG) and endorsed by the UN General Assembly (A/71/644));

## For systemic risks – across sectors:

- High levels of inter-connectiveness across risks and management solutions, including international dimensions, make governance challenging as it tends to be based on sectors;
- Systemic risks require more of a whole of society approach, and an understanding of the connectivity and dependencies. Given the deep uncertainty, we may need other approaches;
- According to the IRGC, “we need a paradigm shift in our thinking, moving our attention **from the properties of the system components to the collective behaviour and emergent systemic properties** resulting from the interactions of these components.”

There is a (contestable) view that current approaches represent a series of failures.



# 1 – Emergency management/DRR

- **A systemic risk** - The fires and the extensive smoke they generated impacted most Australians by cascading across economic sectors, disrupting holidays and recreation, precluding many activities, and resulted in substantial impacts on ecosystem services and habitats. Some of these impacts had international implications. We can, and have, assessed these losses, and have enquiries after the event(s).
- As far as I can tell explicit mention of systemic risks is limited in the enquiries. **Despite characterising the fires as unprecedented with major cascading impacts, recommendations mostly focused on fire and emergencies**, albeit with much to say about structure of government, with some reference to prevention and exposure reduction. This reflects the mandate of the enquiries. The organisations proposed could potentially reinforce the siloed approach we have rather than move towards an across sector and society approach
- The challenge or **difficulty here is that the focus is primarily on the traditional fire and emergency management sector, and they do not have mandate or expertise to deal with many elements of systemic risks**. Historically, when they have attempted to influence other sectors there has, sometimes at least, been savage push back. There has been some movement eg in the planning sector, but my observation is that this has had limited impact on the ground.

# 2 – Broader thinking about the threats

- We can see that the fires were a systemic risk; dealing with them probably needs a broader view than we have traditionally applied to such events – **similar to the governance issue.**
- There were **calls for action of climate change, warnings and concern about the health impacts of smoke and the consequent impacts on the tourism, hospitality and recreation sectors at the height of their busy season, as well as the ecological impacts.** By themselves, emergency services can do little about this, and can probably do little about reducing the risk.
- A systemic approach to **fire risk needs a more trans-sector and trans-disciplinary way – a whole of society approach.** This is often talked about, but there is limited action. We could **address climate change, support ecosystem services as fundamental to how we live in Australia, and consider threats to livelihoods, health, food security as part of risk management and governance;**
- **Would require a lot of cooperation across society and economies – and a lot of negotiation.** Fire and emergency services would need to work with other sectors, and very importantly other sectors would need to work with EM - govt needs to work with commerce and civil society and so on... Maybe some of this is occurring at a local scale.. [can work in smaller jurisdictions, but needs the right people]
- The priorities for action of the Sendai Framework on DRR spur a new understanding of risk, and the value of discerning the true nature and behaviour of systems rather than a collection of discrete elements.
- **In DRR, this broader thinking is increasingly framed internationally as being about integration of three major 2015 international agreements: Sendai on DRR, Paris on Climate change and the SDGs.**

# How can the concept of systemic risk be applied in practical terms?

- **We need to work across sectors, disciplines, occupations, worldviews, etc, - we need a fully trans-sectoral approach** – a systemic approach - so that the cascading effect of risks can be identified and reduced - ideally.
- This is usually viewed as **requiring appropriate governance structures that will somehow work across society and economies** – and we need them. However, formal approaches take time, and tend to be inflexible.
- They also typically ignore common issues like personal and organisational agendas, rapidly evolving political agendas, organised criminal activity, corruption, and escalating inequalities.
- Risk is often emergent and contingent - we need the capacity for rapid reflection and adaptation, and could also **work on informal approaches – more inclusive informal gatherings**. Being stuck with formality limits our capacity for rapid adaptation and to look across the whole of society.



"Innovation curve" from destructive to regenerative approaches