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**HAZARDS**CRC

# CHALLENGES OF MEASURING EMERGENCY MANAGEMENT PERFORMANCE UNDER ADVERSITY: THE GOOD THE BAD THE UGLY

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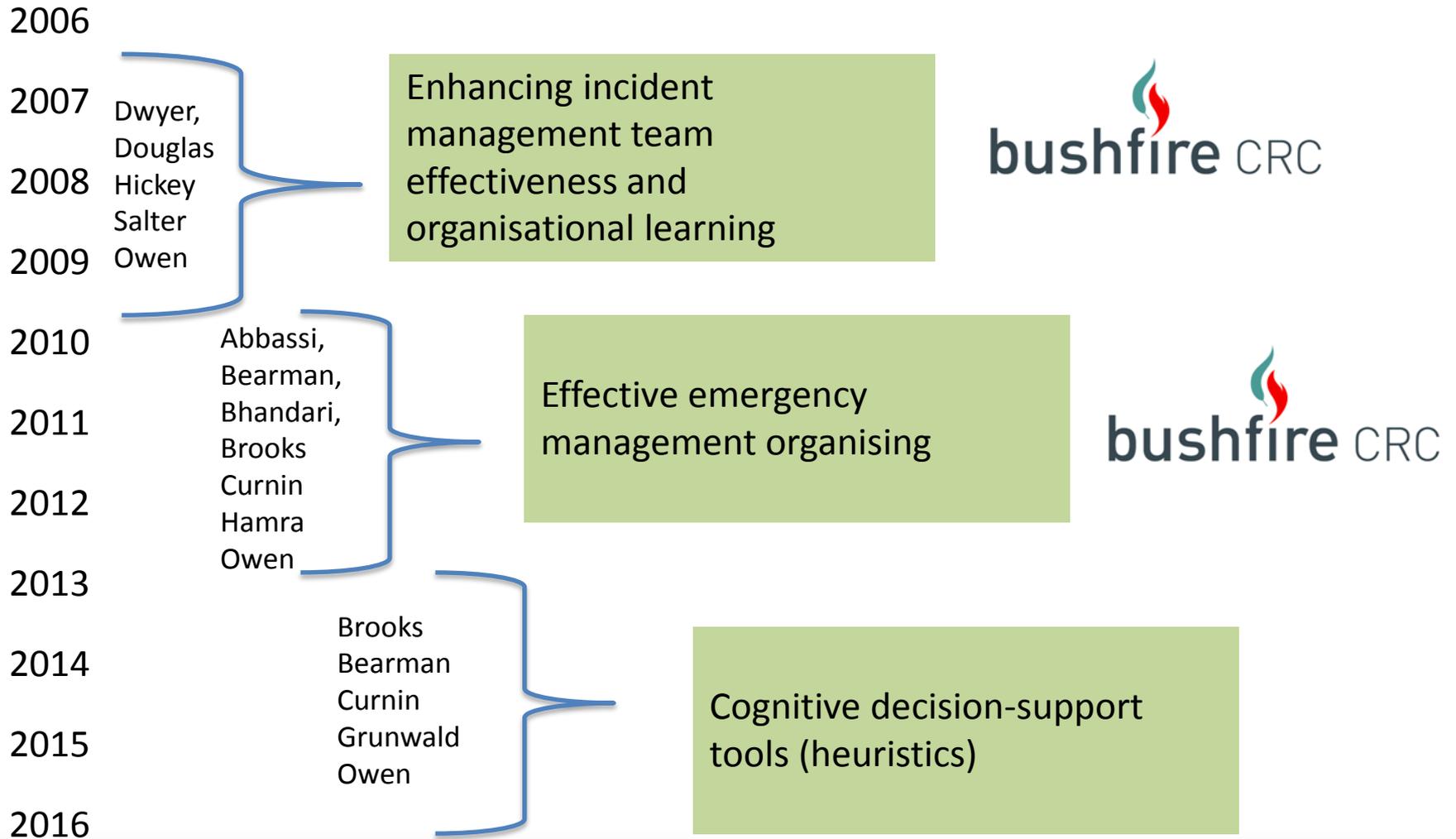
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An Australian Government Initiative



# RESEARCH – LEGACY AND CONTINUITY



# 2014- PRACTICAL DECISION TOOLS FOR IMPROVED DECISION-MAKING IN COMPLEX SITUATIONS

Cognitive  
Decision  
Strategies

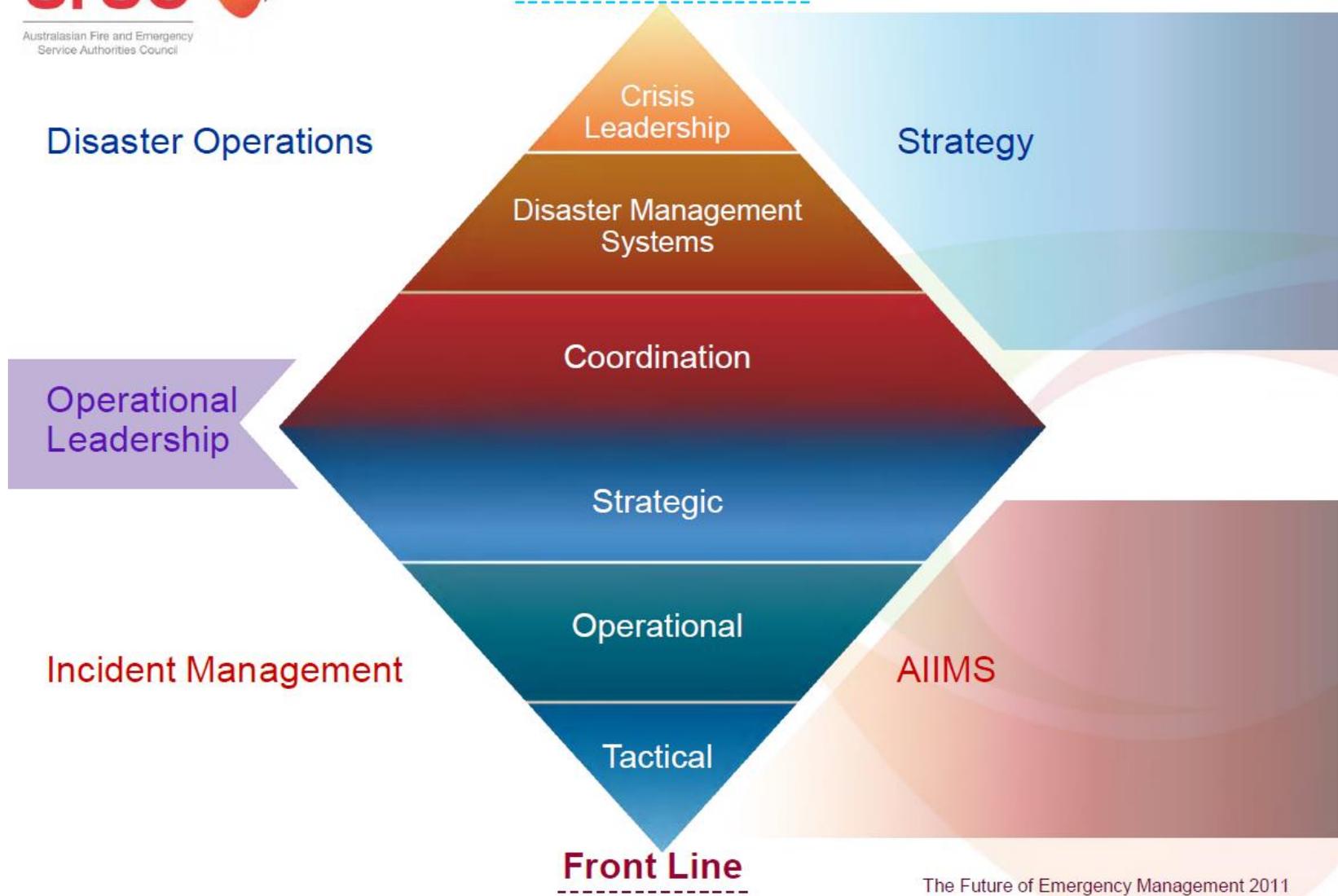


Team  
monitoring  
strategies



Process-based  
performance metrics

Political Leaders



The Future of Emergency Management 2011

Opening keynote, Commissioner Lee Johnson,  
President AFAC

ASPECTS	Local <b>incident</b> management	Strategic <b>emergency</b> management
Event complexity	85% routine	Out-of-scale, non-routine
focus	Locally defined	Broader consequences
Information flows	Incident management and mitigation	National/State-level and political
Time span	Immediate, reactive	Longer duration; indirect effects
Resourcing and prioritising	shift handovers, upwards requests	Prioritisation; Inter-state and international liaison
System Oversight	Safety officer	Reliability assurance
Inter-agency liaison	Minimum to moderate	Significant- whole of government

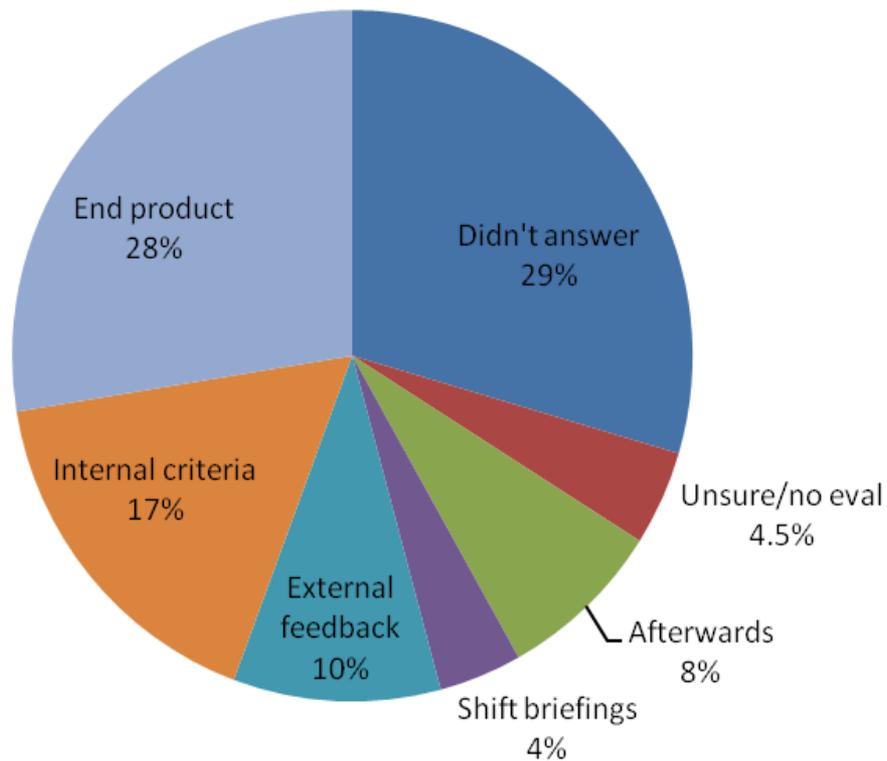
# STRATEGIC LEVEL EMERGENCY MANAGEMENT



# INFORMED BY 2012 INDUSTRY SURVEY

## “WHAT MECHANISMS ARE IN PLACE TO ASSESS THE EFFECTIVENESS OF THE OBJECTIVES”?

### Incident management evaluation mechanisms



Responses of regional and state level participants – industry survey n=206

# INFORMED BY - 2013

## END OF PROJECT - REVIEW AND CONSULTATION

The screenshot shows a web browser window with the address bar displaying <http://multiagencycoordination.wetpaint.com/page/Secondary+Sources++Breakdowns+in+Coordination>. The page title is "Secondary Sources - Breakdowns in Coordination" and the site name is "Multi-agency EM Coordination".

The page features a navigation menu with links for Home, Discussions, Photos, Videos, News, Updates, and Members. A search bar is located in the top right corner.

The main content area includes a sidebar with a "Home" section containing links to "Secondary Sources - Human Factors Issues", "Secondary Sources - Breakdowns in Coordination", "Organisational Survey", "Phase 1 Interviews", and "Research Questions". There is also an "Add a New Page" button.

The main content area has a title "Secondary Sources - Breakdowns in Coordination" and a sub-header "Researcher: Dr Chris Bearman". A profile picture of Dr Chris Bearman is shown next to a text block describing his role as a Senior Research Fellow at the Appleton Institute of Central Queensland University and a Program Director at the University of South Australia. The text mentions his research in applied cognitive psychology and human factors, and his involvement in industry-focused studies.

Below the text, there are two columns of content:

- Watch the presentation**: A video player showing a presentation with a play button in the center. The video title is partially visible as "Future...".
- Review the research papers**: A section with text instructing users to scroll down to the "attachments" section to access "additional research papers". Below the text is an image of several research papers.

The browser's status bar at the bottom shows the URL <http://multiagencycoordination.wetpaint.com/page/Secondary+Sources++Breakdowns+in+Coordination>.

# 2013 REVIEW CONSULTATION METHODS

- Interviews experienced personnel (N=15)
- End user group teleconferences based on WIKI (n=2)
- Workshop with AFAC AIIMS Steering Group
- Consultation survey to confirm issues and drill down
  - Sponsored by CEO AFAC
  - 36 Fire and emergency services agencies seeking 2 participants
  - 38 participants (54%) of potential sample



# CONSULTATION QUESTIONS

- At a strategic level, what constitutes an appropriate set of objectives for out-of-scale events?
- At local, regional or state levels, what are the indicators of "trouble" that may signal movement toward vulnerability in emergency response and its management?
- How would we know that major/out-of-scale events had been well-managed?



## **Sample:**

**Years in industry: 24 (m)**

**Years in agency: 13 (m)**

**All types of ESOs incl**

- **Rural (n=10)**
- **Urban (n=7)**
- **LMAs (n=9)**
- **All hazards (n=12)**

# QUESTION 1 - EFFECTIVE EMERGENCY MANAGEMENT OBJECTIVES

“The critical issues must evolve around community safety” [#27]

“there are clear strategic plans in place to manage both the event and consequences” [35]

[response means] “we have failed to manage risks” [#31]

# QUESTION 1 - EFFECTIVE EMERGENCY MANAGEMENT OBJECTIVES

concerns

“I think we need to be settling on a realistic outcome and that may at times not necessarily be a palatable outcome...it may for instance include some loss of property and in fact loss of life but given the circumstances on the day that in fact may have been a great result... I don't think we are of a mindset to ensure that the public knows just how difficult a task is undertaken at times and perhaps we need to use the media more to our advantage” [#28]

## QUESTION 2 – WHAT ARE INDICATORS OF TROUBLE? – IN RESPONSE

“incident escalates faster than escalation of effort”

“incident managers narrow their focus[#28]

“inaccurate or non-timely information to the community” [#21]

“There is conflicting information /intelligence” [#4]

“plans or priorities between stakeholders are in conflict” [#6].



## QUESTION 2 – WHAT ARE INDICATORS OF TROUBLE? – BIGGER PICTURE

“Increasing loss of experienced staff within agencies. [#10]



“Lack of implementation of lessons learnt into doctrine and practice. [#10]

“Rationalising resources - i.e. removing a surge capacity from an organization. [#16]

“We lose, or fail to establish, contact/engagement with the community at risk” [#2].

# QUESTION 3 – WHAT ARE INDICATORS OF SUCCESSFUL MANAGEMENT?

## Maintenance of ICS and stakeholder engagement

“At all times each ESO should have no problems articulating the following: Exactly who

- from the agency is involved in every level of the response?
- where are they at any moment in time during the response?
- what are they doing in relation to the IAP and who is supervising them?
- If these questions can't be answered in exact detail, the strategic level is not even connected to the rest of the organisation and operating with these unknowns = vulnerability” [#13].

# QUESTION 3 – WHAT ARE INDICATORS OF SUCCESSFUL MANAGEMENT?

**Confidence:** that the confidence of the public and its elected leaders is maintained

“The level of community recovery - a comparative analysis of the capacity of a community before and after the event. Can it do/provide what it did before the event -- or has there been a change in that capacity and if so what is the size of that change. [#10].

# QUESTION 3 – WHAT ARE INDICATORS OF SUCCESSFUL MANAGEMENT?

**Reflexivity and learning** for continuous improvement



“we need to be able to create a learning environment where triumphs and mistakes can be shared in blame free environment for future benefit” [#3].

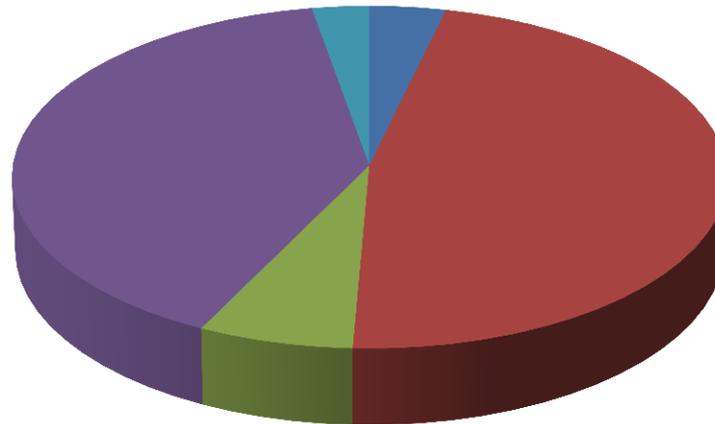
# THEMATIC ANALYSIS OF COMMENTS

Themes found in data	Data extracts coded to theme		
	Q1: Approp objectives?	Q2: Indicators of trouble?	Q3: Well managed?
1 To be prepared and ready	9 (4%)	13 (5%)	2 (1%)
2 To ensure that the incident control system is maintained appropriately (achieving objectives, managing risks)	111 (48%)	117 (48%)	78 (44%)
3 To coordinate with other stakeholders	24 (10%)	16 (6%)	3 (2%)
4 To maintain the confidence of the affected and general public and its elected leaders	85 (37%)	85 (35%)	90 (52%)
5 To support whole of government strategic decision making for consequence management	1 (0.5%)	14 (6%)	3 (2%)
<b>TOTAL</b>	<b>230 (100%)</b>	<b>245 (100%)</b>	<b>176 (100%)</b>

# THEMATIC ANALYSIS OF COMMENTS

## Most concern for

- To ensure internal layers within the response working properly
- To maintain confidence of citizens and elected leaders



N=651 comments  
in total

- To be prepared and ready
- To ensure ICS layers working properly
- To coordinate with others
- To maintain confidence citizens and elected leaders
- To support whole of Govt strat conseq management

# IMPLICATIONS: THE GOOD

- An increasing motivation to engage
- Existing frameworks

- 1) **values** governing the evaluation of performance
- 2) **complexity** of the systems involved
- 3) **validity** of the information on which the analysis and evaluation is based and
- 4) **limiting conditions** under which the emergency response system operated during the emergency event.

Abrahamsson, M Hassel H & Tehler, H (2009) Towards a system-oriented framework for analysing and evaluating emergency response, Jnl of Crises and Contingencies Management, Vol 18(1) pp15-25

# VALUES GOVERNING PERFORMANCE MEASUREMENT

Themes of concern	Values
To be prepared and ready	A healthy, capable, resilient workforce
To ensure that the incident control system is maintained appropriately (achieving objectives, managing risks)	Safety of personnel, trust and empowerment
To coordinate with other stakeholders	Respect and integrity
To maintain the confidence of the affected and general public and its elected leaders	Primacy of life and public service
To support whole of government strategic decision making for consequence management	Support and service contribution

# COMPLEXITY GOVERNING PERFORMANCE MEASUREMENT

Themes	Complexity
To be prepared and ready	Workforce restructuring
To ensure that the incident control system is maintained appropriately (achieving objectives, managing risks)	Technological interoperability and limitations
To coordinate with other stakeholders	Legislative frameworks; government policy
To maintain the confidence of the affected and general public and its elected leaders	Demographic shifts
To support whole of government strategic decision making for consequence management	Regional economies indirect economic effects

# VALIDITY AND LIMITING CONDITIONS

## Validity

- Performance measured **during** or **after** an event (hindsight bias)
- **Measuring** performance or making **judgements of guilt** (two different tasks – 2 different groups)

## Limiting conditions

- How named?
- Could negative consequences have been avoided?
- Were there other ways of affecting the objectives in a positive way that were not exploited?

## CONCLUSIONS: THE BAD

- Externally driven and media/politically based critique important BUT

## CONCLUSIONS: THE BAD

... *“on the contrary, the mediatisation and politicisation may cause crisis managers to lose track of operational lessons and underlying organizational lessons and **instead** pay excessive attention to symbolic crisis learning verbalised and framed in terms of buzzwords that may hamper critical reflection or laid down in merely rhetorical fantasy learning documents”* Deverell (2009, p. 85)

# CONCLUSIONS: THE BAD - INQUIRY

- Don't necessarily learn the right lessons
- Tensions between investigating the cause-consequences as well as assigning blame

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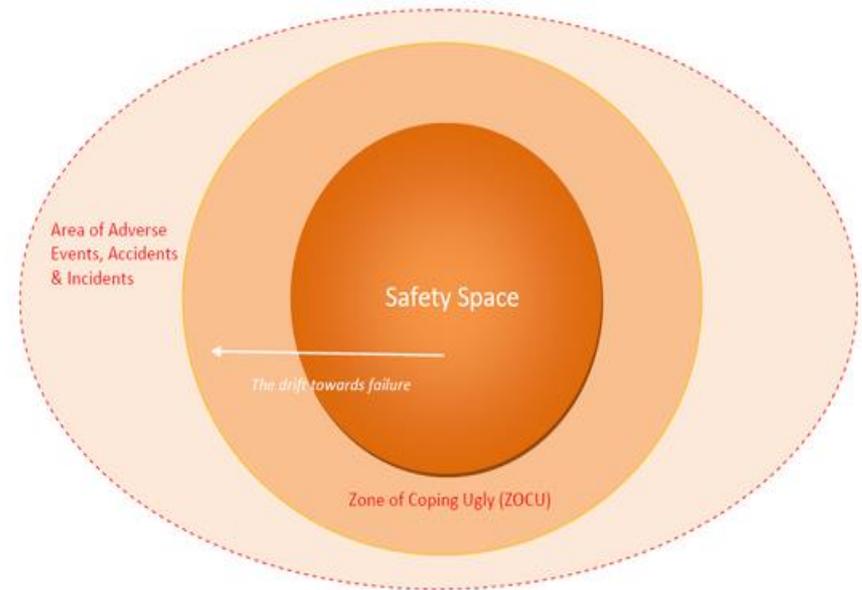
*“given that both types of evaluation [of EM performance] commence along the same sort parallel path -- of seeking to identify the cause of the crisis and how the response of the crisis was handled, it is not too surprising that the missions of cause-and-consequence and guilt blur together”.*

# CONCLUSIONS: THE UGLY

*There is a need to explicitly try to make the limiting conditions under which the emergency response performance occurred visible when measuring its performance.*

- degraded conditions
- Migration from safe to unsafe working practice

## Zone of Coping Ugly

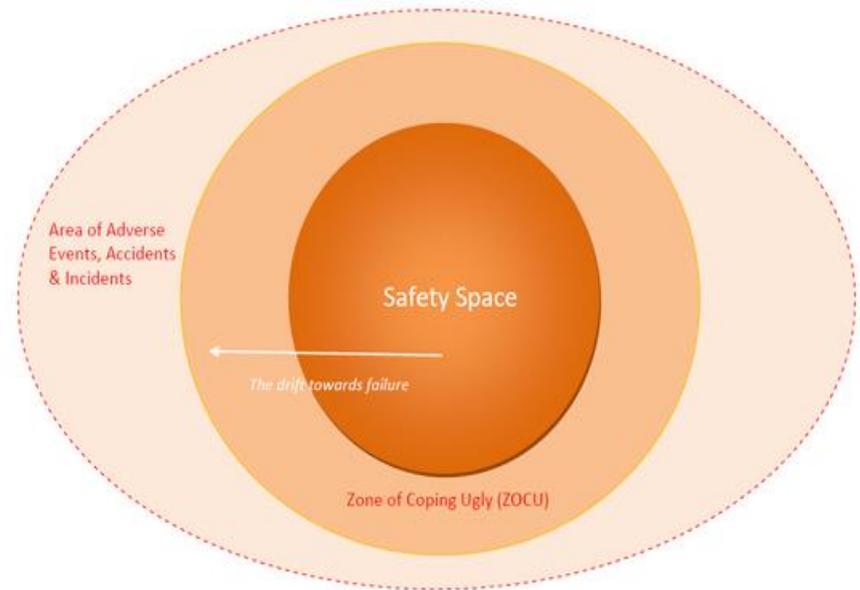


Ben Brooks, Bushfire CRC,  
2013

# CONCLUSIONS: THE UGLY

*An important attribute of expert decision-makers is that they seek a course of action that is workable, but not necessarily the best or optimal decision.... time pressures often dictate that the situation be resolved as quickly as possible. Therefore it is not important for the course of action to be the best one; it only needs to be effective (Phillips, Klein & Sieck, 2004, p.305).*

## Zone of Coping Ugly



Ben Brooks, Bushfire CRC,  
2013

# NEXT STEPS

**Consultation with existing end users of developing a framework for measuring performance**

- **Cognitive decision strategies**
- **Team monitoring strategies**
- **Process-based performance metrics**

