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The aim of this series is to provide reliable up-to-date summaries of research by CEPS researchers, visitors and research students. Written in an accessible style, the papers provide material useful for practitioners and policy-makers as well as academics. It also aims to encourage dialogue between the research and policy/practice communities. In this briefing paper, Dr Tim Legrand provides a synopsis of themes and research questions identified at the CEPS Research Workshop held in Canberra on the 14th May 2010 which drew together senior policy makers, practitioners and scholars to discuss resilience and vulnerable infrastructures. Such events assist researchers within CEPS identify, conceptualise and prioritise key issues as part of our work programs dealing with vulnerable infrastructures and government coordination.



Professor Simon Bronitt

Director

## Infrastructure Vulnerability and the Coordination of Government Responses

The Hyatt Hotel, Canberra 14th May 2010

Dr Tim Legrand

### Overview

The security of Australia's national infrastructures is of critical importance to its continued economic prosperity and social well being.

Yet, the volatility of Australia's climates and the threat of terrorism present Australia's national infrastructures with a set of challenges almost unique in the world. Within the past five years, Australia's towns and cities have encountered tropical cyclones, droughts, catastrophic flooding and destructive bush fires. Into the future, Australia's transport, energy, food, water, and communications systems (amongst many others) face severe and continuing natural and human-induced hazards.

The Australian Government's Critical Infrastructure Resilience Strategy (2010) and the accompanying supplement sets out the Government's ongoing commitment to maintaining and continuing to build partnerships with the owners and operators of critical national infrastructures. The Strategy documents outline existing challenges and articulate the importance of risk mitigation and resilience enhancement for infrastructures.

Against this backdrop, The Australian Research Council (ARC) Centre of Excellence in Policing and Security (CEPS) coordinated and hosted a one-day workshop with partner organisations and researchers to identify joint research priorities for a stream of work strengthening the resilience of critical national infrastructures. Soon after the workshop, the Critical Infrastructure Resilience Strategy documents were published.

The objective of the workshop was to identify and agree areas where academic research could strengthen the knowledge and expertise on infrastructure vulnerability and the coordination of government responses.

### About the CEPS project on Governance and Coordination of Security

This project has been set up to examine the attributes of Australian and regional infrastructures that are most vulnerable to exploitation and attack by transnational threats.

A significant part of the project will explore ways that governments can reduce infrastructure vulnerabilities and inform governmental planning and response to critical incidents. The project team will consider:

1. Ways to increase the resilience and immunity of key infrastructures to transnational threats; and
2. The impact such measures would have on our ways of life and modes of engagement with our regional neighbours.

The project will also map the range and variety of government arrangements at federal and state levels devised to meet security threats. The team will explore the challenges confronting a whole-of-government response both within and between governments and identify ways different countries have sought to react and assess their policy and organisational impact. The research will examine the governance and function of the Australian Government's new approach to managing national security, including the impact of the National Security Statement<sup>1</sup> (2008) and the Critical Infrastructure Resilience Strategy<sup>2</sup> (2010)

## Summary of Research Themes

### 1. Principles of Resilience (p.3)

There was a consensus in the workshop that a coherent and agreed concept of resilience (given its evolving nature) is a prerequisite to actually achieving resilience. It is a clear priority to agree and promote definitions of resilience and associated concepts as a precondition for policy and legislative development.

### 2. Risk Management (p.3)

A systematic and accurate approach to identifying the risks posed to Australian communities and infrastructure is regarded as high priority for Government. Research into the approaches taken by other countries, notably the UK, can

offer both positive and negative lessons for Australia.

### 3. Community and Individuals (p.4)

The capacity of communities and individuals to withstand and respond to disaster is poorly understood, but is important for disaster planning. There is a clear opportunity for research to enhance the Government's knowledge of and relationship with communities and individuals.

### 4. Roles and responsibilities of the private sector (p.4)

As a key part of many national infrastructures, the private sector has a critical role in developing resilience. Its strategic relationship with Government continues to evolve. Research into effective public-private partnerships may yield a more inclusive and holistic approach to building resilience.

### 5. The role of Government (p.4)

There are clear benefits to a "joined-up" approach at the local government, state and federal levels. Research can assist the development of effective inter-government working arrangements.

## Workshop Themes

The workshop generated several overarching questions that connect the themes of coordination, government, infrastructure, community and resilience. A workshop participant noted that, "this concept of resilience [...] has got to be built on a consensus between the state and civil society". As an area of complexity, there are few discrete categories of research. As such, many questions refer to the interrelationships between associated concepts, such as:

- How is resilience interconnected between community and business sectors, the individual citizen and government?
- What lessons can we glean from domestic and overseas instances of disaster and resilience?

- How does government manage the politics of risk, uncertainty and imperfection?
- To what extent is Australia exposed to international vulnerabilities?

Amongst the variety of topics covered during the workshop, five key themes and attendant research questions emerged. These have been set out below, identifying (i) the theme, (ii) the learning/ research priorities, and (iii) research questions.

NB: Italicised text indicates a participant comment transcribed from the recording of the workshop. These edited comments are not attributable to any agency or individual and are used simply to refine the research questions.



1 <http://pmrudd.archive.dpmc.gov.au/>  
 2 <http://www.nationalsecurity.gov.au/>

## Theme 1: Principles of Resilience

Resilience has become a widely used concept in government. It was, for instance, employed widely in the White Paper on Counterterrorism (2010), yet officials have encountered difficulties in using the concept in a practical manner. Partly this is because until the publication of the Critical Infrastructure Resilience Strategy there was no unified agreed definition of resilience, nor is there robust guidance on how it is situated within decision-making.

Its widespread applicability to the private sector, communities, and individuals compounds this ambiguity: resilience is seen as an outcome or an organising principle, yet it is realised in the public/private and individual/community spheres by different means. While resilience is still seen as inherently useful for government, it needs to be held to a common definition and given specific characteristics for its use in public, private and community spheres.

### Research priorities -

**(Definitional Learning) To develop a shared understanding and functional concept of resilience.** This definition should acknowledge the common and distinctive principles of resilience in building resilient critical infrastructure, communities, businesses and individuals.

### Specific activities -

Describe the desired attributes and outcome(s) of resilience; the processes associated with building resilience; the associated current/projected resources necessary; the available information on 'what works'; the interdependencies with other sectors.

### Research questions -

- *What difference will [resilience] make as an organising principle?*
- *What difference does the concept make to what occurs already?*
- *What are the new insights and measures or the change of emphasis that policymakers should be developing?*

**(Comparative Learning) To explore the ways resilience has been operationalised in other countries.** The approaches taken by the UK and Canada to integrating resilience in their security strategies in particular, could provide useful insights for Australia.

### Research questions -

- *What lessons can be drawn from the approaches taken by other countries?*
- *How does the local context affect the approach likely to be adopted in Australia into the future?*
- *What regional risks are shared with neighbouring countries?*

## Theme 2: Risk Management

Awareness of the risks posed to Australian infrastructures, communities and businesses is an integral aspect of resilience. Some agencies have developed systems to identify and manage emerging risks: ASIO, for example, has established a Business Liaison Unit. Yet, not all government agencies have the means or capacity to audit risks. A workshop participant observed:

*“to adequately prepare for inevitable crises, we need to understand the likelihood and consequences of the risks we face, the effectiveness of current capabilities, and resilience [...] of our community and infrastructure”.*

Risk assessment is linked to priority setting. The government faces rising public expectations, considerable media scrutiny and limited financial resources:

*“how do you prioritise, and really in regard to what threats, non-traditional natural disasters or perhaps even human threats, [...] where are you going to earmark the greatest level of resources?”*

In this context, ministers require evidence-based evaluations of risks and vulnerabilities to support their

decision-making. To arrive at balanced assessments, a risk register offers a way for agencies to identify and assess their exposure to certain risks. The UK has made progress on its “Risk Register”, which may be instructive for the Australian context.

### Research priority -

**(Evidence Based learning) To develop an evidence-based mechanism to identify and prioritise risks.** This mechanism should be directed towards government officials and incorporate open-source and classified data to arrive at a matrix of risk.

### Specific activities -

- To improve risk assessment communication and management tools and techniques, both for the strategic policy and operational contexts
- Develop the capability to ‘measure and compare different kinds of threats and risks to inform strategic prioritisation and resource allocation processes’
- To improve the speed and accuracy of the modelling tools to support real time operational decision making for crisis co-ordination’

### Research questions -

- *How do we deal with inevitables, unknowns and uncertainties?*
- *What are the risks we are trying to prevent?*
- *What are the likelihood and consequences of the risks we face?*
- *What is the effectiveness of the capabilities that we have?*
- *What levers does the government have that can affect/influence risk?*
- *Who “owns” the risk [in the context of land planning, architecture, public utilities, etc]?*
- *How do we make risk awareness meaningful?*



- How do you prioritise risks? Where are you going to earmark the greatest level of resources?

### Theme 3: Community and Individuals

While communities face similar risks to infrastructures, creating resilience for individuals is viewed as a different undertaking. The relationship between government and community in managing risk and resilience is, presently, unclear. There is a gap in the government's understanding of community resilience and it was noted in the workshop:

*'[we need to] understand more about individuals and how they think about risk and how they respond to risk; and how governments can help not by taking risk from them but [determine] the best way for governments to help individuals and communities [...] understand and better respond to risks'.*

However, it is acknowledged that communities and individuals can be two separate (albeit co-constitutive) entities. It was noted that there is a

*"conceptual tension between community outreach on the one hand and the individual on the other... I think there is an overall recognition that somehow the concepts need to be reconciled".*

The expectations of government held by communities and individuals are also an important consideration. It was observed that community expectations of government varied according to circumstance and location. New Zealand's public education program to encourage households to have a 72-hour emergency kit (the period in which households are expected to be self-sufficient following an earthquake) was cited as an example of a clear contract of expectations between the state and its communities.

#### Research priority -

**(Psychological/social learning) To identify indicators of community and individual resilience.** This set of indicators might incorporate research on the likely community expectations of government in specific circumstances (natural disaster, industrial accident, terrorism, etc.) and should identify the levers available to government to develop community resilience.

#### Research questions -

- What is the difference(s) between resilience in the community from the resilience of the individuals?
- What is the role of individuals in developing resilience?
- How does government help individuals and communities understand and better respond to risks?
- How do individuals currently conceive of, and respond to, certain risks?

### Theme 4: Roles and Responsibilities of the Private Sector

The private sector has a clear stakehold in the government's approach to resilience and risk mitigation. Its role in the associated processes of building resilience is guided by the Critical Infrastructure Resilience Strategy. It is essential to continue to create a space for partnership between the government and the private sector to ensure that private sector vulnerabilities with public ramifications can be resolved:

*"It strikes me that we create a very clear binary between the government sector and private sector (which we typically conceptualise as corporate players). I think what's coming through here is that we have a border category that kind of spans [both sectors], it's almost a hybrid between public and private."*

Moreover, it was observed that financial incentives can run counter to the public interest and, accordingly,

*'you can't achieve [resilience] by just dealing with individual market players and that whilst some of them might be doing the right thing for themselves, there is a possibility of us brokering a market-wide response, which is a better outcome for the community'.*

#### Research priority

**(Corporate and Civil Society Learning) To investigate mechanisms (possibly building on existing arrangements such as the Critical Infrastructure Protection Modelling and Analysis Program and the Trusted Information Sharing Network) for strengthening partnership between the government and non-government sectors to continue to build resilience in critical infrastructure.**

#### Research questions

- What are the evolving critical vulnerabilities in the private sector?
- What steps have businesses taken to mitigate risks?
- What are the effective principles for public/private collaboration in risk/resilience?

### Theme 5: The Role of Government

The federal government faces the challenge of promoting the harmonization of approaches to resilience both within the state and local government structures. A workshop participant noted that,

*"One of the areas I'd be interested in is roles and responsibilities in a leadership sense at all levels of government".*

In particular, the notion of subsidiarity (decision-making devolved to the lowest tier of government) was viewed as an issue for resilience and disaster management in the Australian context:

*“My experience in government is that you can have the best in principle agreement to subsidiarity in relation to resilience [...] but when something bigish happens, the top will literally subsume the bottom.”*

The principle of subsidiarity is embedded in EU governance frameworks. It stipulates that decisions should be taken at the governance level closest to the citizen, unless action taken at a higher level would furnish a greater benefit.

In respect of subsidiarity, there is a potential space for research into the specification and coordination of roles and responsibilities at the local, state and federal government tiers.

Vulnerabilities beyond domestic borders, it was noted, pose a severe threat to highly globalised Australian industries:

*“we are among the world’s top seven most globalised countries. By definition, in many areas of food supply chain, we are less self reliant than all but seven countries”.*

This vulnerability, whilst acknowledged, was seen as marginal consideration within strategic planning:

*“the notion of thinking about international security as an integrated component within your overall national security thinking is something that doesn’t come very naturally in your day in/day out processes”.*

The interdependency of highly globalised countries has clear implications for domestic, regional and international resilience. An enhanced mapping of potential external threats (i.e. reduction in oil supply, dramatic increases in food prices, etc) would provide support to strategic planning and vulnerability mitigation.

*Additional considerations for the role of government included:*

- Individual/community expectations of government.

- What works in national policy architecture.
- Legal and constitutional obstacles to effective resilience-building.

**Research priorities**

1. **(Inter-agency learning) Identify and chart the roles and responsibilities between the federal, state and local government tiers in the context of resilience-building.**
2. **(Geo-political learning) Identify individual and confluent vulnerabilities beyond Australian borders.**

**Research questions**

- *How are roles and responsibilities delineated in other federal systems; are these robust in times of crisis?*
- *Are there any existing domestic federal-state-local arrangements (in other domains) that might provide a template for role-setting?*
- *What regulatory, policy or legislative levers can the government use to enhance the coordination and effectiveness of national resilience strategies?*
- *Are there legal or constitutional obstacles to coordinating resilience-building at the national level?*
- *What are the known external vulnerabilities to domestic interests, and how are these incorporated in strategic planning at present?*
- *What future external vulnerabilities are anticipated?*
- *What are the industries that are most exposed to global instabilities (what sorts of instabilities?)*
- *What levers or influence does Australia have to safeguard the most vulnerable ‘interdependent’ industries/interests?*

## About the Author

Dr Tim Legrand is a public policy specialist with expertise in the transfer of best practice and policy learning between countries. He has previously worked as a policy consultant to the UK Home Office and Ministry of Justice and is presently employed a Research Fellow in the ARC Centre of Excellence in Policing and Security (CEPS).

About this document:

This paper is a thematic record of the workshop discussions and the associated research priorities identified by partner agencies. Your comments on this paper are welcome and will contribute to the directions of research arising from the workshop.

Attending agencies and partner organisations:

- Department of Prime Minister and Cabinet
- Attorney-General's Department
- Centre of Excellence in Policing and Security
- Australian Security Intelligence Organisation (ASIO)
- Australian Crime Commission (ACC)
- Australian Federal Police
- Victorian Department of Premier and Cabinet
- Queensland Government Representatives
- Australian National University
- Department of Families, Housing, Community Services and Indigenous Affairs

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