

# Strategic Analysis Paper

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## **Black Swan in the Engine Room: Australia's Ability to Manage Catastrophic Disaster in the Pilbara.**

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### **Key Points**

- Regional development in northwest Australia suggests that the Pilbara will increasingly continue to be a significant generator of wealth for Australia, Western Australia and the region itself.
- The rise of the Pilbara's economic profile is accompanied with an increased sense of vulnerability to existing, as well as emerging threats. These threats may be human, environmental or industrial.
- The region has some experience of natural disasters and industrial accidents, such as cyclones and Varanus Island. These events have shown how vulnerable the region is to emergency situations and the challenge of dealing with them.
- The Pilbara's economic credentials and importance as a resource and energy export hub make it particularly vulnerable to catastrophic disaster.
- The circumstances and consequences of such events require a unique emergency management response. Currently, doubts remain over Australia's ability to manage a large-scale disaster.

### **Summary**

Australia is experiencing an unprecedented expansion of its minerals and energy sectors. The Pilbara region of northwest Western Australia is a significant part of this outcome. Much of this involves on- and off-shore facilities that are vulnerable to natural disasters, industrial accidents and, potentially, acts of sabotage and other forms of violence and destruction.

A relatively minor disruption may result in a significant and costly loss of production. Nor is the cost restricted to export earnings: loss of employment, environmental damage and the impact on local, regional and national economies cannot be under-estimated.

To help prevent and alleviate such disasters, Australia requires a national capability. This capability must be able to plan for such disasters. It must have an analytical and research capacity, the ability to develop the necessary doctrine and capabilities and the authority to deploy and direct assets.

Capabilities require time to develop. This involves not only identifying the personnel needed but also considerations relating to doctrine, training and preparation, equipment and communications and aspects of command and control.

Many of these capabilities will not necessarily be dedicated to disaster or emergency management. Instead they will include existing national and state emergency and security forces as well as health, communications, transport and other agencies. Well-established disaster management forces within the private sectors should also be incorporated.

## Analysis

### ***The Pilbara 2020:***

Australia's continued prosperity and economic credentials will increasingly rely on the Pilbara. Popularly referred to as the 'engine room of Australia', the region's economy is based on the extraction, processing and export of minerals and energy, providing \$71 billion to the national economy in 2010<sup>1</sup>. In context, this represents six per cent of Australia's Gross Domestic Product (GDP) or the individual GDP equivalent of 104 of the world's 184 nations.

Commentators, including the Reserve Bank of Australia, have contended that the current 'resource boom' in the Pilbara was a significant factor in allowing Australia to avoid the severity of the Global Financial Crisis. The sustained growth of the Pilbara ensures that the activity in the resource and energy sectors will spill over into greater national economic opportunities, through demand for labour, intermediate inputs and investment, and payment of taxes and royalties.

Over the coming decade, the region's already advanced iron ore and hydrocarbon sectors will be further augmented by new projects. By 2018, the Pilbara Development Commission projects the total earned annually by these sectors to be approximately \$211 billion, constituting seventeen per cent of Australia's GDP. A disproportionate ratio for a population projected to reach only 62,000 in the same period.

The logistical hubs of Port Hedland and Karratha will further increase in significance, as they service the offshore Carnarvon Basin. Endowed with Australia's largest known oil and gas reserves, the Basin will provide an increasing strategic share in Australia's oil production, particularly as Bass Strait production continues to decline. Australia, and more particularly

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<sup>1</sup> Pilbara Development Commission, Future Development of the Pilbara, 2011, p.3

the Pilbara, has the potential to become the world's leading exporter of liquefied natural gas (LNG) over the coming decades.

Multinational and local hydrocarbon producers have successfully marketed Australia's comparatively low sovereign risk and the benefits of LNG to allow the nation to become the world's fourth largest supplier. The development of the Wheatstone, Gorgon and Pluto projects suggest Australia could be the largest producer by 2030. Such developments suggest that the region will be not only feature as an integral consideration for Australia's energy security, but also a key concern for nations in the energy-conscious Indo-Pacific and potentially beyond.

The Pilbara is responsible for a little under forty per cent of the world's iron ore production. Mining companies have capitalised on the region's large high-grade reserves, proximity to key strategic markets and relative industry efficiency, to meet the seemingly insatiable demand from emerging markets. In 2010, iron ore production was worth \$46.5 billion to the national economy, representing three per cent of GDP, with 95 per cent of production based in the Pilbara.

Continued structural changes to the Chinese economy, as it transitions from an agricultural to a manufacturing base, will lead to an increasingly urbanised population with a rising per capita income, intensifying steel demand for on-going investment in housing and infrastructure. Beyond China, economic development in South and South-East Asia presents further scope for demand, as other states transition to their phases of intensive growth in steel requirements. Acknowledging this, current operations in the Pilbara will be complemented by significant expansion projects, including Solomon, Roy Hill and the West Pilbara, which will serve to meet projected demand. Committed and proposed iron ore projects have the potential to contribute more than \$65 billion to the national GDP.

The Western Australian government's \$1 billion 'Pilbara Cities' initiative, suggests demographic and critical infrastructure developments will mimic economic growth. The Royalties for Regions scheme will target key delivery areas, including infrastructure coordination; community projects; land availability and development; and economic diversification, to turn the initiative into a reality. The vision will attempt to transform Port Hedland and Karratha into modern dynamic urban centres, comparable to Townsville-Thuringowa in North Queensland. The initiative remains ambitious and significant inhibitors to this demographic and social development remain. Irrespective of this, however, the region will loom larger in the national psyche and will develop an increasingly complex social character in the coming decades.

### ***Catastrophic Disaster***

Clearly then, the Pilbara will be of continued economic and strategic importance to state and national interests. Disruption by human, industrial or environmental agents would have a catastrophic impact on the national economy and also potentially broader ramifications. This was recently demonstrated by the 2011 Queensland Flooding; heavy rains inundated the Bowen Basin between Cairns and Georgetown, home to the country's metallurgical coal industry. The floods caused the loss of 15 million metric tons or 20 per cent of coal exports

for the first quarter of 2011. According to the Australian Bureau of Statistics, the \$2.5 billion loss caused the largest quarterly fall in GDP since 1991. Australia's primary export partners, including China, India, Japan, Taiwan and South Korea, were also heavily impacted.

Were an event of this magnitude to occur in the Pilbara, the impact would be significantly magnified, and would constitute what Emergency Management Australia (EMA) defines as a 'catastrophic disaster'. According to the EMA's definition, a catastrophic disaster is an extreme hazard event with severe economic, health, social and environmental consequences, which cannot be resolved by existing state and national disaster management capabilities. The two defining measures of such an event are that it will:

- Not be possible to immediately meet the needs of those requiring assistance within the existing capability of an individual state or territory, or nationally
- Take a considerable time to recover.

While Australia has faced relatively few events that have met these criteria, State and Federal governments recognise the importance of well-developed emergency and risk management arrangements. Australia has an advanced capability to meet hazards but the rapid growth in the Pilbara's economic and social profile, presents significant and unique challenges that require an enhanced practice to manage potential 'black swan' events.<sup>2</sup>

### ***Australia's Disaster Management Doctrine***

Universal disaster management doctrine has progressively evolved over recent decades, particularly post-September 11, from notions of 'response and recovery' to an increased institutional and policy focus on 'planning' and 'preparedness'. The paradigm shift reflects the logic that the need for strong, well-resourced and forward thinking contingency plans is imperative, to tame and control a crisis.

Within this context, the primary role of policy makers and crisis managers is to establish institutional frameworks and foster cultural climates that develop community resilience and reduce vulnerability. To achieve this goal, vulnerability assessments consider a broad range of threats, rather than focussing on specific hazards. Additionally, policy and management plans consider a range of variables, which may influence potential threats and capacity for preparedness, response and recovery. The maxims of 'preparation' and planning now characterise major UN policies, as well as current policy and practice in the United States, United Kingdom, New Zealand and Canada.

Consistent with this approach, the 1989 'Commonwealth Counter Disaster Concepts and Principles' published by the Natural Disasters Organisation(NDO), the predecessor organisation to Emergency Management Australia, advocated four guiding principles:

- An all-hazard approach;
- A comprehensive approach;
- An all-agencies approach; and

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<sup>2</sup> An unpredictable event with significant implications.

- A 'prepared community' approach.

The guiding principles detailed in the document emphasised the importance of: threat analysis; organisation of assets; arrangements for command, control and co-ordination; mechanisms for information management; and development of rigorous contingency plans.

Since the NDO's publication, Australia's disaster management apparatus has experienced significant shifts in structure, focus and methodologies. Yet, the publication remains Australia's guiding volume in the legislation, planning and organisational arrangements for disaster management. Comprehensive and integrated themes have become the defining principles of Australia's crisis doctrine.

### *Comprehensive Approach*

Stakeholders in emergency management have recognised that Australian communities must have the capacity to meet a broad-base of challenges; these hazards may originate from natural, industrial or social agents. Accordingly, Australia has adopted a comprehensive, all-hazards approach to disaster management; recognising this, communities have adopted Prevention, Preparedness, Response and Recovery (PPRR) activities, to reduce susceptibility to potential hazards.

Prevention activities refer to strategies to mitigate the impact that potential threats may create. This is achieved through fostering community resilience and/or reducing susceptibility to potential hazards. A large focus is further placed on Australia's comprehensive approach on preparedness activities, within which arrangements and contingencies are developed, to be employed if and when disasters eventuate. In the event of disaster, response strategies denote the activities enacted by stakeholders to manage the situation. Finally, in the post disaster stages, recovery activities aim to reconstruct physical infrastructure and undertake the 'restoration of emotional, social, economic and physical well-being'.

### *Integrated Approach*

Policy makers and risk managers have recognised that for Australia's risk management capability to be effective, arrangements must exist for the coordination and organisation of stakeholders involved in PPRR activities. As a result, relevant organisations and agencies alongside the local, State and Commonwealth governments have developed an all-agencies approach to develop appropriate legislative and public policy frameworks and foster community preparedness. In this context, resilience is a responsibility shared with various stakeholders, including government, committees, businesses and individuals, not solely the responsibility of emergency management agencies.

This approach to disaster management was approved in November 2008 by the Ministerial Council for Police and Emergency management and confirmed by COAG in December 2009. To build on this work, COAG established the National Emergency Management Committee, which authored the 2011 National Strategy for Disaster Resilience.

### ***Leadership in times of National Disaster***

Disaster management in Australia involves all three levels of government. Emergencies of national consequence, however, as in the instance of a catastrophic incident in the Pilbara, would go beyond the remit of existing arrangements.

Recognising this, in 2008 COAG endorsed the Model Arrangements for Leadership during Emergencies of National Consequence (the Model), to supersede the National Emergency Protocol of 2006. The Model serves to guide response and recovery strategies in emergencies of “national level policy, strategy and public messaging or inter-jurisdictional assistance”. In endorsing the model, COAG recognised the importance of clarity for the roles and responsibilities of the various relevant authorities and stakeholders in an emergency of national consequence.

#### *Local Government*

Local Governments in the Pilbara, although likely to be quickly sidelined in the event of a catastrophic disaster, have significant responsibility for regional emergency management. In partnership with the State Government, local authorities play a vital role in prevention and mitigation activities and strategies. The Pilbara’s regional council responsibilities include:

- Undertaking hazard mitigation strategies, including risk assessments, public education and community awareness programmes;
- Representing Pilbara interests and concerns within State and Commonwealth emergency management forums;
- Liaise in post disaster analysis and assessment.

#### *West Australian Government*

Under Australia’s constitution, the State and Territory governments have primary responsibility for emergency management within their territorial and legislative jurisdiction. According to EMA’s Australian Emergency Management Arrangements, these responsibilities include:

- Coordinating legislation, policy and implementation of comprehensive emergency management strategies;
- Engaging and fostering relationships with relevant stakeholders, including the commercial sector; local governments and Indigenous communities, to assist in the implementation of disaster PPRR activities;
- Ensuring provision of adequate prevention and management strategies. State Governments must develop emergency awareness, education programmes and warning systems to ensure community resilience and response.

In Western Australia, the Emergency Management Act 2005 provides the framework within which relevant agencies and stakeholders operate. The Act and corresponding regulations, such as the Emergency Management Regulations 2006, detail the roles, agencies and plans of Western Australia’s disaster management policy.

Within the framework, overall responsibility for disaster management rests with the Minister for Emergency Services, who operates through Western Australia's peak emergency management body, The State Emergency Management Committee (SEMC). Comprised of senior executive members from State organisations considered essential to emergency management arrangements, the SEMC's key functions include:

- Providing assessments to the Minister on disaster management systems and detailing the State's preparedness to meet potential contingencies;
- Liaising and directing all stakeholders, including government entities, the industrial sector and broader community, to develop efficient emergency capabilities;
- Acting as a conduit between community assessments and policy, to enhance resilience in those likely to be affected by potential threats;
- Driving the preparation of policy and planning, including the monitoring and review of the Emergency Management Act, to ensure Western Australia has an adequate level of preparation and resilience to meet challenges.

Importantly, the Commissioner for Police, the SEMC's Executive Officer, acts as the authority to request Commonwealth government assistance.

#### *Commonwealth Government*

While State governments retain primary control in the development and implementation of disaster management policy, the Commonwealth government is nonetheless an equally important party, particularly in the event of a catastrophic incident.

Commonwealth disaster management agencies coordinate federal disaster contingencies, through: disaster research, including meteorological, hydrological, geo-physical and geo-data assessments; information management; and providing national leadership in disaster mitigation strategies.

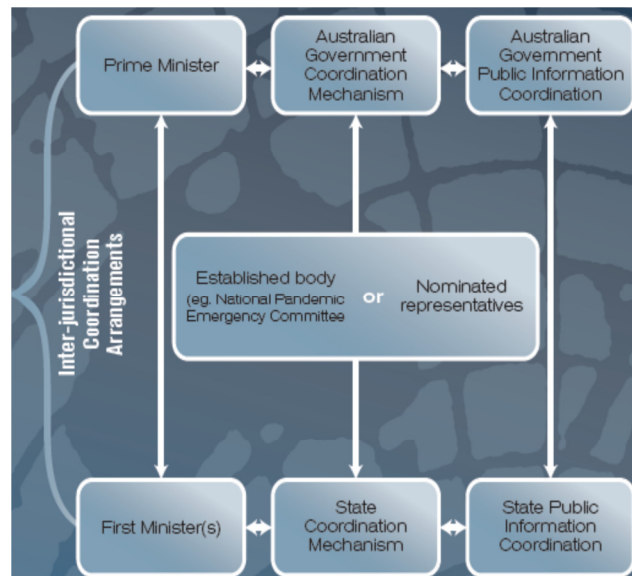
Additionally, in the Australian Emergency Management Arrangements it notes that the Commonwealth has specific responsibilities for 'national security and defence; border control; aviation and maritime transport; quarantine; astronomical and meteorological observations; enforcement of Commonwealth legislation; and international relations'. All likely considerations, with corresponding federal agencies, that would have significant involvement in the event of a catastrophic incident.



In the event that state responses to emergency events are insufficient, such as in a catastrophic disaster, the Commonwealth, in conjunction with the affected state may provide operational support and mobilise additional resources. Assets assigned are likely to take the form of assistance from the Australian Defence Force.

Commonwealth responses to disaster mitigation and management are undertaken by EMA. In the event of a

catastrophic disaster, including a large scale natural disaster or terrorism, the Federal government would coordinate response from the Crisis Coordination Centre. The newly-opened Centre can accommodate 100 people and features secure video teleconferencing and high-speed communication links.



**Figure One: Model Arrangements for Leadership during Emergencies of National Consequence.**

### *Coordination Arrangements*

In the event of an emergency of national consequence, clear coordination arrangements are of vital importance, to ensure a rapid response and the delivery of support. Accordingly, Australia has adopted a graduated response and recovery arrangement. In the event of an emergency, the Local and State Governments are responsible for emergency response and incident management within their jurisdictions. In large-scale contingencies, intra-state, inter-state and Commonwealth assistance may all be provided.

A catastrophic disaster, however, would require enhanced State-Commonwealth coordination and assistance provisions. Supporting this notion, the Model provides clear lines of communication and coordination for relevant stakeholders, as demonstrated in Figure One.<sup>3</sup> The enhanced governance communication arrangements are designed to allow the Prime Minister and the Premier to liaise and develop strategies to respond and recover from the event. Consultation may include policy, strategy and communication of important information to the public.

### **Strengths**

#### *All-hazard Approach*

The all-hazard approach, a fundamental element of Australia's emergency management system, ensures that disaster managers are prepared for a variety of potential contingencies.

<sup>3</sup> Emergency Management Australia, Australian Emergency Management Arrangements, 2009 p.18



In the post-September 11 environment, in global disaster management preparations, the salient, yet measured, hazard of terrorism threatened to subsume traditional emergency mechanisms. The numbers of stakeholders involved in the emergency management arena increased, requiring even greater levels of coordination. While terrorism presents a number of unique challenges, in much the same way as industrial accidents and natural disasters have their own idiosyncrasies, many of the consequences and planning arrangements are likely to feature inevitable similarities.

Australia, while expanding counter-terrorism legislation and capability, recognising the potentially increased threat, has importantly maintained the all-hazard approach to emergency management. Emergency management consideration has focussed on a large range of possible contingencies, from human, industrial, and environmental agents, while simultaneously developing unique measures for specific hazards when necessary. As Pavel Baev, a senior researcher at the International Peace Research notes:

*'it was Katrina not Al Qaeda that devastated the platforms and refineries along the U.S. Gulf coast in August 2005; it was a short circuit not a well-placed bomb that caused the massive blackout in Moscow in May 2005; and it was not a shoot-out but a labour strike that stopped the pipeline construction in Azerbaijan in November 2005.'*<sup>4</sup>

Thus far, Australia has had the resilience to respond to disaster contingencies, due to vigilance by emergency managers in securing against a range of potential perturbations.

### *Resilience*

In recent history, the concept of resilience has featured as a key property of the Australian emergency management system. Traditionally, the term 'resilience' has been applied to the material sciences, referring to an object's ability to return to its original form following deformation. Since the 1970's, however, the term has been adopted, as part of emergency managers' vernacular, in a more metaphorical sense. Disaster resilience refers to a system's capacity to 'prevent, mitigate, prepare for, and recover from the impacts of disasters'.

The resilience-focus of Australia's disaster management doctrine ensures the impact of disasters are minimised. Recognising the adage 'an ounce of prevention is worth a pound of cure', emergency stakeholders led a change and coordination effort to withstand disaster contingencies and consequences. These demands include understanding the risks to the community, economy and environment; reducing identified risks; enhancing the capabilities of parties likely to be effected; and supporting the developments of relationships between stakeholders. As Kofi Annan notes:

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<sup>4</sup> Baev, P., *Reevaluating the Risks of Terrorist Attacks Against Energy Infrastructure in Eurasia, China and Eurasia*, Forum Quarterly, Volume 4, No. 2 (2006) p.33

*‘Building a culture of prevention is not easy. While the costs of prevention have to be paid in the present, its benefits lie in a distant future. Moreover, the benefits are not tangible; they are the disaster that did not happen’.*<sup>5</sup>

Further, resilience relies upon efficiently and effectively coping with the consequences of disasters when they do occur. Hazard programmes allow communities to return to a pre-disaster state quickly and, importantly, to function at a higher level by learning from their experiences. Vitally, Australia’s emergency management system recognises that resilience is a dynamic process, developed and strengthened over time, enhancing, rather than replacing, existing strengths and arrangements.

### *Policy and Structure*

No level of advance preparation can fully mitigate disaster. To avoid hesitation or paralysis during a crisis, disaster managers must consider the possibilities inherent in a broad-range of contingencies. It is therefore essential that disaster management agents develop a measurable response capability for a range of threats and challenges. The infrastructure of crisis coordination must be clear, regularly reviewed and able to be enacted quickly in the event of a crisis. It involves the drafting of policy; development of doctrine; and establishment of protocols to ensure information and resources are shared, decisions reached, promulgated and implemented.

Ostensibly, disaster management agencies within Australia recognise and support this concept; demonstrated by COAG’s endorsement, in February 2011, of The National Strategy for Disaster Resilience. In the recent past, the graduated level of response, coupled with legislatively mandated roles and responsibilities, has ensured a satisfactory response from Local, State and Commonwealth agencies during crises.

The codifying of State and Local accountabilities goes some way to developing a truly operational framework for disaster response. Additionally, Western Australian disaster management policy clarifies and effectively integrates national response plans. While the mere existence of emergency legislation and plans does not automatically guarantee adequate response, their presence provides a foundation in which prevention and action pre- and post-disaster may occur. Most importantly, accountability fosters technical and political collaboration between Local, State and Commonwealth agencies. This is demonstrated in the Pilbara, where the Pilbara Security Collective, with participants from government agencies and the private sector, provides a quarterly forum within which security challenges and issues are discussed. On a larger, more strategic scale, disaster management has featured heavily in COAG discussions over the last few years.

Australia’s ‘graduated’ system of emergency management has historically proven to be efficient, and will continue in the future to be most appropriate for most contingencies.

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<sup>5</sup> Annan, K., *Facing the humanitarian challenge: Towards a culture of prevention*, New York, US; Sep. 1999, p.1

Local and State resources will be ideally positioned within range of disaster sites so as to rapidly respond to initial alerts. Additionally, these agencies should have knowledge of local conditions and even, potentially, have secured agreements with regional and state entities for mutual aid and assistance. Commonwealth emergency response is likely to be geographically distant and hence slower.

Furthermore, Federal entities are likely to lack local knowledge and may potentially be unable to rapidly integrate with local efforts in the manner required during a crisis. Accordingly, EMA plays a subsidiary role in Australian disaster management. Rather than providing deployable staff for operations, EMA's primary role is during the pre- and post-stages of a disaster. Other federal agencies, with greater capacity and resources, may be deployed, but as a support to State operations, rather than a primary role.

In the event of a catastrophic disaster, recognising the greater complexity of such events, scope exists for leadership or certain responsibilities to be transferred from the initial disaster manager to more senior emergency stakeholders. These provisions would allow those with different skills, broader authority and greater resources to provide the necessary solutions to resolve the crisis.

It is important to note, however, that Australian ability to respond to a disaster of catastrophic magnitude has not been tested. In *'Taking a punch: Building a more resilient Australia'*<sup>6</sup>, Anthony Bergin and David Templeman note that a level of complacency exists within the Australian community about the nation's ability to deal with a wide-range of disasters. The response to the 2002 Bali Bombings gave the impression that Australia was prepared for a disaster on the scale of a Hurricane Katrina. Yet, no true litmus-test event has occurred in Australia as a benchmark.

### *Depoliticised*

The framework for emergency response functions requires well-defined and consistent direction, coupled with a clearly prioritised set of purposes. Recognising this, many nations, including the United States and Australia, have adopted regulations and mechanisms to predetermine and coordinate the role and extent of the involvement of political leaders and operational commanders during a crisis. Unlike the United States, however, Australian emergency response systems are largely depoliticised. According to Andrew S. Mener, from the University of Pennsylvania, the American disaster management system suffers from 'irrationally lenient disaster declarations'.<sup>7</sup>

Mr Mener attributes high-levels of declared 'disasters', to the expanded role American politicians play as disaster managers during a crisis. American State governments have, in

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<sup>6</sup> Begin, A., and Templeman, D, *Taking a punch: Building a more resilient Australia*, Canberra, May 2008

<sup>7</sup> Mener, A., *Disaster Response in the United States of America: An Analysis of the Bureaucratic and Political History of a Failing System*, Pennsylvania, 2007, p.55

the recent past, declared a 'disaster', forcing Federal involvement, in contingencies that could have been handled by the states, to avoid potential political and economic fallout. While Federal resources are invested in relief operations and reimbursements, focus on mechanisms for truly catastrophic disasters, including policy; structure; capacity building and resources are neglected. As demonstrated by the State Emergency Committee, with its sole responsibility to declare a disaster, the bureaucratic nature of Australian disaster management ensures a depoliticised, and, accordingly, a more effective system.

A catastrophic incident in the Pilbara would cut across a range of organisational, jurisdictional and governmental boundaries. Vitally then, Australia's politically neutral disaster management system: fosters collaboration; enhances policy; and promotes integration of structures and systems. Led by all levels of the bureaucratic network, existing strategic and consultative planning processes ensure appropriate legislation, policy guidelines and protocols.

Bureaucratic provisions, from *ad hoc* networks across disaster management stakeholders, to formal arrangements such as, 'Inter-jurisdictional emergency management coordination',<sup>8</sup> further enhance coordination for disaster reduction and response activities and systems. The organisational approach allows for vitally important relationships, capacity and knowledge sharing that would be extremely difficult in a politicised American-style system. As is so often the case, however, in a Commonwealth system of government, scope exists for more clarity and greater cooperation in disaster management between the levels of government.

### ***Challenges and Limitations***

#### *Australia has avoided the 'Big One'*

Australian exposure to catastrophic disasters has been limited. As previously discussed, no true litmus-test event has happened, creating public complacency, a significant concern in a system that places heavy emphasis on the community.

While Australia has a robust disaster management system, luck has played an equally important role in avoiding a catastrophic disaster. Australia's lack of experience in facing the 'Big One', means that disaster stakeholders do not have first-hand knowledge of post-event, 'lessons learned' analysis, a critical element in the assessment of capability and functionality.

There remains a dearth of public information from State and Commonwealth management agencies to counter this point. Fundamentally, it must be recognised across all levels of government, and reflected in accompanying documents, that catastrophic events require a unique management system.

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<sup>8</sup> National Counter Terrorism Committee, National Counter Terrorism Plan, Canberra, 2008, p.23

### *Coordination*

The Commonwealth Government must adopt a greater leadership role in emergency management to enhance national prevention and response capability. The graduated response approach has worked well and, in the future, will continue as the logical approach to most contingencies. In catastrophic circumstances, however, direct federal intervention will be necessary. These events will be fundamentally different from other emergencies. Their scale and rapidity will require an immediate authoritative response, crossing various jurisdictions with significant demand on resources and assets.

Nascent developments, including the Commonwealth policy on management of counter-terrorism and the publication of the National Strategy for Disaster Resilience, must be expanded.

Scope exists for the EMA to play a greater co-ordination role in the event of a catastrophic incident. Command and control functions are best placed within the States' jurisdictions, and are constitutionally guaranteed. Opportunity exists for the EMA to act as the primary federal coordination vehicle, managing the Federal response, inter-state resources and potential international support.

An expanded EMA, with supporting legislation, would also improve efficiency. Currently, more than 30 federal emergency response plans exist across the various federal agencies. The EMA could reduce duplication and promote due diligence, by monitoring, testing and exercising response plans.

Additionally, the Federal Government should commission and make freely available a National Catastrophic Disaster plan, based on the National Counter-Terrorism Committee's National Counter-Terrorism Plan. The National Strategy for Disaster Resilience represents the foundation of this proposed document. As the body responsible for the implementation of the strategy's recommendations, The National Emergency Management Committee should produce a document that clearly articulates the roles, responsibilities and arrangements for local, state and federal stakeholders. The document would be popularly received right across the public and private sectors, removing ambiguity and promoting accountability.

### *Inter-Organisational Relations*

Planning the response to catastrophic disaster requires inter-organisational coordination. Disaster in the Pilbara would constitute an interdepartmental issue for the Western Australian government. Similarly, a large-scale disaster impacting the Pilbara's economic profile would be an inter-governmental issue, requiring direct Commonwealth involvement. Planning and response to large-scale disasters requires involvement and consultation with a number of agencies with threat-relevant expertise.

During non-disaster periods, entities with roles and responsibilities during an emergency operate independently of each other, often in silos. Yet, during a disaster different agencies may be thrust together and expected to work in concert to provide assessments, support, protection, and so on. Many of these agencies, particularly at a State or Commonwealth level, will have their own processes, information, applications and technology.

To enhance disaster response functions, a concerted effort is required by all entities to achieve greater awareness of the stakeholders involved in emergency contingencies. An increased awareness of the roles, structures, culture, mechanism, strengths and weaknesses of responding stakeholders, will ensure efficiency and avoid 'social loafing' during a crisis.

Increased awareness has its foundations in the planning process. Greater consultation between agencies and inter-agency professional development, provide low-cost, high impact policy options that would significantly enhance current readiness and reduce confusion around jurisdictions. Training and joint exercises are also a significant part of this outcome, and are considered in greater detail below.

### *Role of the ADF*

Currently, the ADF provides support during a disaster upon request from the State Government. By definition, however, a catastrophic event will overwhelm current arrangements, creating a requirement for an expanded Defence role.

Defence possesses the most suitable – possibly even the only – assets capable of reaching the Pilbara to provide medical, logistical and engineering support in an extreme event. The ADF, as demonstrated in international catastrophes, such as Operation Pakistan Assist II, has a demonstrated and proven ability to provide mass care, deploy resources and support recovery operations.

Undeniably, Defence culture fosters organisational and leadership qualities vital for disaster coordination. In recent history, these credentials have seen Defence personnel take a leading role in response and recovery operations; demonstrated by Major-General Mick Slater's role in the Queensland flooding. This convention should be codified in future catastrophic emergency documentation, which would help to ensure the Prime Minister is kept abreast of response activities and emergent needs in the affected areas.

It is neither necessary nor advisable for the ADF to expand its role to include increased support during conventional emergencies. It is beyond the remit of the ADF to provide sustained support during such contingencies, and could drain resources from established objectives. Importantly, though, scope must exist for direct ADF involvement in the event of a catastrophe. As David Templeman and Anthony Bergin argue, 'military expertise in network-centric warfare could be shared with first responders to developed network-centric emergency management'.<sup>9</sup> Although demanding, these contingencies are likely to be smaller than military operations and will not significantly affect the military readiness of personnel.

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<sup>9</sup> Begin, A., and Templeman, D, *Taking a punch: Building a more resilient Australia*, Canberra, May 2008 p. 11

On the contrary, catastrophic relief activities may mimic ADF wartime support operations, promoting preparation for future missions.

### *Public/ Private Partnerships*

The Pilbara is home to a significant share of Australia's onshore and offshore critical infrastructure. Current and projected projects will see this ratio rise dramatically over the coming decade, particularly in the offshore sector. The Australian Government defines critical infrastructure as;

*'those physical facilities, supply chains, information technologies and communication networks which, if destroyed, degraded or rendered unavailable for an extended period, would adversely impact on the social or economic well-being of the nation or affect Australia's ability to ensure national security'.<sup>10</sup>*

Approximately 90 per cent of Australia's critical infrastructure is privately owned or operated on a commercial basis. The Australian Government's *National Strategy for Critical Infrastructure Protection*, provides a forum for the commercial sector and its private operators to manage, along with government agencies, potential threats and challenges to assets.

While the strategy provides a positive framework, there is scope for significant enhancement, particularly in fostering goodwill among companies with business interests in the Pilbara. Woodside, operator of the North West Shelf project, alleged that information shared with the Attorney General's Department Trusted Information Sharing Network (TISN) initiative, had been leaked to competitors.

Catastrophe impacting on the performance of critical infrastructure will rely upon dialogue and an effective rapport between the public and the private sector, to formulate solutions and continuity plans. As a matter of some urgency, initiatives should be developed and enacted, to develop this relationship. Such developments, would promote confidence within the private sector and resolve a number of the short comings identified in the Force Posture Review, at a much reduced cost and ADF demand.

### *Exercises*

Exercises simulating disaster can provide a forum to critique proposed response operations. Observers in the aftermath of Hurricane Katrina noted that exercises:

*'Provide an accurate picture of how well the federal government can both coordinate the actions of its own agencies and work collaboratively with state and local governments in responding to a catastrophe.'<sup>11</sup>*

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<sup>10</sup> Department of the Attorney General, *Critical Infrastructure Protection*, Commonwealth of Australia: Canberra, December 19, 2008.

<sup>11</sup> Wormuth, C., and Witkowsky, A., *Managing the Next Catastrophe: Ready or Not?*, Centre for Strategic and International Studies, June 2008 p. XI



Official and scholarly post-exercise reviews support this judgment. Simulations, particularly those that involve senior officials, strengthen the core functions of emergency organisations, subsequently enhancing preparedness. In a country the size of Australia, distance remains a key issue and nowhere is this more so than in Western Australia. The sheer distance between Canberra and the Pilbara, or even Perth for that matter, highlights the importance of increasing operational awareness of the region.

Given that nothing compares to first-hand experience, priority should be given to encouraging visits to the region by senior State and Commonwealth disaster stakeholders. Emergency managers can then experience directly the unique qualities and challenges of the region and its emerging emergency management needs.

Furthermore, drills offer an opportunity for disaster managers and responders to develop a rapport. At times, prior to a catastrophe, these may be disparate groups. Extreme disaster, however, may potentially blur boundaries and, for instance, could see primary health care providers working with ADF personnel. Exercises will provide opportunities for collaborative relationships, that will help facilitate response operations in the event of a contingency.

At a functional level, realistic exercises will provide insight into response plans. Drills provide important operational details, including scale of response and cost. Simulation activities also provide opportunities to test surge capacity and capability, and, if required, improve response plans.

### ***Conclusion***

The expansion of the Pilbara in social and economic development represents a significant disaster management concern.

The growth of Port Hedland and Karratha into medium density urban centres, concentrates a population into one of the most climatically violent locales in Australia. Assessments of the effects of climate change for the region are equally pessimistic.

Over the coming decade, planned economic and infrastructure activity will increase exposure to industrial accidents. In addition to disrupting project and stakeholder revenue, such events bring a myriad of regional, state and national consequences.

The rise of the Pilbara's economic profile is accompanied by an increased sense of vulnerability to existing, as well as emerging, human threats. The Pilbara's export credentials may present an attractive target, with low-input, high impact results.

As the region grows in economic and strategic significance, it is imperative that strategies exist and are exercised, to mitigate such contingencies.

To achieve this, national disaster management reform is required. Catastrophe management strategies should form a policy priority for Local, State and Commonwealth Governments. Failure to prepare for 'black swan' events, bring not only direct ramifications for the community involved, but, as demonstrated by the Pilbara, a myriad of national and potentially international consequences.

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*Any opinions or views expressed in this paper are those of the individual author, unless stated to be those of Future Directions International.*

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