

# **RSOG SEMINAR**

## **Natural Disaster Resilience – Experience from Down Under**

with

**Dr. Richard Thornton & Mr. Martin Wehner**

**When** : 24 March 2016  
**Where** : Razak School of Government  
**Speakers** : Dr. Richard Thornton & Mr. Martin Wehner

### **About the Seminar**

One of the most remembered lines of the song from Down Under by Men at Work in the 1980s was “...you better run, you better take cover...” Whilst one can always argue with the lyrics, people running helter-skelter looking for a safer place is often associated with natural disasters. Some of these disasters are expected, especially ones that are seasonal. There are also those that come without any hint. Be it as it may, the speed and magnitude of the natural disasters that has occurred lately is unprecedented in many ways and has caught even the most prepared stakeholders off-guard. The Indian Ocean earthquake triggered a tsunami in 2004 and the mega flood that hit the east coast of Peninsular Malaysia in 2014 are some of the examples. In this seminar, Dr. Richard Thornton and Mr. Martin Wehner will share their experience in Australia, particularly at the Bushfire and Natural Hazards Co-operative Research Centre (CRC) in preparing for natural disasters such as the role of research, community and stakeholders’ involvement, multi-hazard approach, and disaster risk reduction.

### **Summary**

The operating environments of emergency services are becoming increasingly complex and complicated. Emergency services in Australia has had to revamp and improvise its emergency service approaches to meet these complex demands. There is a range of critical drivers that has driven agencies to have a paradigm shift on the emergency service approaches. Australian emergency services have seen a need to reform its efforts in mitigating emergencies and continuously improve its operational procedures in order to meet these challenges and maintain and improve protection of the communities it serves.

Demographic, climate change and economic factors have all contributed to this paradigm shift. Demographically, Australia has an ageing population and this sometimes can present problems due to a number of reasons as it increases the groups’ vulnerability to impacts of natural disasters. This group is also removed from the tax paying population and this has an effect on financial revenue. There is also a decline in population in the regional areas. Australia relies on its emergency services in the regional areas to deal with emergency services and it is mostly voluntary. Immigration has also increased the vulnerability for some

non-English speaking immigrants and policy makers have had to pay close attention to this culturally diverse group especially with the communication planning. Australia is not only facing hotter weather and declines in rainfall that has affected water storage but is also facing longer severe weather seasons. This has put a strain on resource sharing as Australia, USA, Canada and New Zealand have international sharing of resources, staff and volunteers. Economically, there is an increase in cost, budgets have declined and there is competing demand for funds which is unsustainable for the long run.

All these drivers have led to the existence of the Australia National Strategy for Disaster Resilience. The key message from the National Strategy is that disasters will happen, hence the need to build community capacity by connecting and educating communities. It is also important for people to know their risk, be prepared and able to act during the disaster. There is also an emphasis on learning from past experiences.

The bottom line of all this is that there has to be a paradigm shift towards a mitigation focused approach that emphasises on the resilience of a community towards natural disasters. It has to be multi-hazard in its approach and there has to be a collaboration in multi-disciplinary research.

The Bushfire and Natural Hazards CRC (BNHCRC) was established in 2013 to meet these needs. The \$130 million eight years funding for the BNHCRC in cash and in-kind, which has been contributed by the Australian Government and the CRC's more than 45 partners, has improved approaches to mitigation, operational responses and community resilience to natural hazards. The core of BNHCRC is to build a disaster-resilient Australia. BNHCRC's purpose is to conduct end-user inspired high quality applied research to reduce the risks from natural hazards, contribute to the national disaster reliance agenda, to build Australian research capacity and enable Australian small-to-medium enterprises to be innovative in natural hazard products. End user engagement is central to all aspects of its operation. The disaster research that BNHCRC focuses on are fire, floods, cyclones, storms, earthquakes, tsunami and heatwave and does not focus on health and pandemics, animal diseases, chemical, biological, radiological and terrorism hazards.

The research programme of the BNHCRC is structured around three overarching themes, composed of clusters of inter-related projects. They are: Economics, Policy and Decision Making, which addresses the need for an evidence-base for decision making and prioritising resource allocation across the emergency management sector. Resilient People, Infrastructure and Institutions is aimed at improving the qualification and quantification of resilience, and the factors that promote or inhibit its development. Improved understanding of these factors should help optimise the ability to identify vulnerability, manage the risk and enable resilience. Bushfire and Natural Hazards Risks aims to achieve improved modelling of likely events and precursor conditions, greater accuracy of forecast tools and more timely forecasts. This is expected to result in increased preparedness for the impacts of natural hazards, improved communications and warnings, and an enhanced ability to predict and mitigate the risk.

There is mounting pressure for the need to promote resilience, rather than focusing on disaster response alone. The strategies and policy devices need to include a better understanding of the physics and mechanics of natural hazards, the vulnerability of the built environment and economy, the behaviour of people under extraordinary circumstances and the ability of organisations, institutions and policy to cope with unforeseen events and emerging technologies.

Geoscience Australia is the Australian Government's national geoscience agency, applying geoscience to Australia's most important challenges. It is the government's technical adviser on all aspects of geoscience, and custodian of the geographic and geological data and knowledge of the nation. It has a variety of experience across the hazard, exposure and vulnerability aspects of flood impact and risk and has developed flood vulnerability models for a variety of Australian building types and is in the process of developing more. Geoscience Australia serves as a lead end user to BNHCRC's research clusters helping to align the BNGCRC research to better meet the needs of mitigation decision-makers.

It is interesting to know that Geoscience Australia supported the multinational search effort to find the missing Malaysia Airlines flight MH370. Its scientific teams provided procurement advice, technology and planning expertise for the bathymetric survey. They enabled the baseline mapping of over 200 000km<sup>2</sup> of sea floor in a remote area of the southern Indian Ocean.

The need to promote resilience, rather than focusing on disaster response alone is very important. The strategies and policy devices need to include a better understanding of the physics and mechanics of natural hazards, the vulnerability of the built environment and economy, the behaviour of people under extraordinary circumstances and the ability of organisations, institutions and policy to cope with unforeseen events and emerging technologies.

### **Issues raised**

1. In any research or programme development it is important to have end users' engagement. The role and participation level of the end user is crucial and determines the success of the research.
2. The ability to have an open dialogue with end users is crucial. Building the trust level between end users and researchers is a long term effort and must be focused on.
3. In any programme or policy development, a multi-disciplinary approach is key to finding solutions to 'Wicked Problems'.

## **About the Speaker**

Dr. Richard Thornton is presently the Chief Executive Officer of CRC in Melbourne, Australia. He led a team to develop the CRC following the Prime Ministerial announcement in February 2013. Trained in physics, Dr. Thornton has over 20 years of experience in the field. Until January 2016, he was a member of the Board of the International Association of Wildland Fire and the Chair of the Editorial Advisory Committee of the International Journal of Wildland Fire.

Mr. Martin Wehner is a senior structural engineer who joined Geoscience Australia after 22 years of industry experience. Since joining Geoscience Australia, his research work has centered on the vulnerability of structures to flood, wind, and earthquake. He is the researcher for the CRC project – “Cost Effective Mitigation Strategy Development for Building related to Flood Risk”.

## **Contact**

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