

## IRDR International Centre of Excellence (ICoE) Expressions of Interest:

### **The Joint Centre for Disaster Research and the Wellington Region's "IRDR International Centre of Excellence in Community Resilience" (ICoE:CR)**

#### **Vision Statement:**

An internationally recognised region-wide centre of excellence to address community resilience to disasters.

#### **Mission Statement:**

The Joint Centre for Disaster Research at Massey University, Wellington, will coordinate the development of a region-wide International Centre of Excellence encompassing key organisations across the region to answer the question, "How does a community make itself resilient to future disasters?". Through partnerships at the local, national and international level, leading research will be applied to the practice of the Wellington Region Emergency Management Office's Community Resilience Strategy. The implementation and outcomes of this strategy will in turn become a primary research focus of the ICoE.

#### **Organisations of this ICoE:**

Disaster Risk Reduction (DRR) research had been identified as a research area of critical strategic importance to New Zealand, with outcomes that directly support the achievement of Government endorsed strategies. It is recognised that research needs to be highly collaborative, so as to provide the framework for integrating research and funding across agencies and disciplines, together with research users to achieve the aim of a New Zealand society that is more resilient to natural hazards.

The direction of research will be guided by the Natural Hazards Research Platform Strategy<sup>1</sup> that is closely linked with the national Civil Defence Emergency Management (CDEM) strategy, which has been identified as providing the Government's strategic direction in Emergency Management. Given the broad hazard and risk exposure in New Zealand, effective civil defence emergency management is critical. The national CDEM strategy articulates the Crown's vision for a 'Resilient New Zealand: communities understanding and managing their hazards'. The approach to realising the vision of a Resilient New Zealand derives from the CDEM Act (2002)<sup>2</sup> and requires a comprehensive risk management approach in addressing the consequences of hazards, across the four elements of emergency management — Reduction, Readiness, Response and Recovery. By definition, comprehensive risk management must be evidence-based and so is reliant on well promoted, coordinated and accessible hazards and disaster research. Enhancing resilience requires the development of new tools, knowledge and understanding, and a range of capabilities across a wide range of disciplines.

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<sup>1</sup> NZ's Natural Hazards Research platform is a multi-party research platform funded by the Ministry of Business, Innovation and Employment, that is 'dedicated to increasing New Zealand's resilience to Natural Hazards via high quality collaborative research.' 'The Platform has approximately NZ\$14M per annum to invest in research and applied research for the benefit of New Zealand that involves approximately 150 scientists and engineers working for the partner organisations, and for national and international subcontractors.' (<http://www.naturalhazards.org.nz/NHRP>)

<sup>2</sup> The Civil Defence Emergency Management Act (CDEM Act) 2002 can be found at <http://legislation.govt.nz> with amendments applied in March 2012.

## The Joint Centre for Disaster Research

The Joint Centre for Disaster Research opened in December 2006 and is a joint venture between Massey University and GNS Science within the School of Psychology, based at the Wellington campus of Massey University. The centre undertakes multi-disciplinary applied teaching and research aimed at: (1) gaining a better understanding of the impacts of natural, man-made, and environmental disasters on communities; (2) improving the way society manages risk; and (3) enhancing community preparedness, response to, and recovery from the consequences of natural, man-made, and environmental hazard events.

The JCDR Director reports to a management board consisting of three Massey University and three GNS Science staff. Both of the JCDR's partner organisations (Massey University and GNS Science) are members of the New Zealand Natural Hazards Research Platform, which co-exists as IRDR New Zealand. The Natural Hazards Research Platform has a standing Strategic Advisory Group, with Terms of Reference covered by the Platform Partnering Agreement. The SAG, which covers all platform programmes held by GNS Science, NIWA, U. of Canterbury, Massey U., U. of Auckland and Opus, has assisted with, and endorsed, the strategy elements detailed above. The Natural Hazards Platform also has a Technical Advisory Group to assist in the process of ensuring a robust research programme is designed and implemented.

## Collaborating Organisations within the Wellington Region

The proposed "IRDR International Centre of Excellence in Community Resilience", herein referred to as **ICoE:CR**, is composed of a number of key organisations across the Wellington region, each of which play a fundamental role in the research into, and implementation of, disaster preparedness. As described above, the JCDR will act as the co-ordinating organisation across this network. The other lead organisation fundamental to the structure of this ICoE is the Wellington Region Emergency Management Office (WREMO). This office encompasses the nine councils of the Wellington region, and was formed in July 2012 when they amalgamated their Civil Defence Emergency Management functions into one office. WREMO is "a semi-autonomous 'network enabled' organisation"<sup>3</sup> divided into three functional areas – Community Resilience, Operational Readiness and Business & Development.

The co-ordination of the nine councils across the Wellington Region offers WREMO an opportunity to work with and between different communities to 'enhance resilience by improving their ability to anticipate risks, limit the impacts of those risks, and then bounce back rapidly from an emergency event'. The structure of the organisation is unique in the sector in that its staffing and resources are weighted toward enhancing community resilience. Consequently, a Community Resilience Strategy was developed to provide a set of guiding principles for engagement, strategic objectives to enhance resilience and relevant tools for Emergency Management Advisors. The organisational structure of WREMO and its Community Resilience Strategy spearhead a fresh and cutting-edge approach for the emergency management sector to consider.

As a key partner in ICoE:CR, WREMO offers both a pathway through which to examine and evaluate the implementation of leading research into societal resilience and preparedness, while also offering an opportunity to be a truly connected and resilient capital city. One of the primary goals of WREMO's strategic plan is to foster cooperation via Knowledge Generation and Transfer between

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<sup>3</sup> Community Resilience Strategy, Wellington Region Emergency Management Office, 2012.

the universities (incl. Massey University, Victoria University, Wellington Institute of Technology, University of Canterbury, University of Otago), research institutes (incl. GNS Science, NIWA, MetService), and companies that are at the forefront of disaster, hazard, and emergency management research in the region. Through this they aim to promote the region as a 'Global International Centre of Excellence in Disaster Risk Reduction and Community Resilience Building'. In partnership with the Joint Centre for Disaster Research, this will sit within this ICoE enabling both leading edge implementation of research outcomes into emergency management and disaster preparedness practice, while also fostering an environment for world-class research into community resilience at the local and regional level across and within organisations.

### **Key Personnel**

The ICoE:CR will be led by a Director (Dr. David Johnston) with a complement of 50 faculty, staff, and affiliated researchers who will work with ICoE:CR on various projects. The disciplines of the researchers include geology, geography, geographic information science, remote sensing, engineering, computer science, sociology, planning, public health, business, history, journalism, psychology, and gender studies. The full-time personnel work collaboratively with the broader research staff to develop proposals, conduct research, and produce high quality publications in the areas of integrated research. In addition, ICoE:CR will fully or partially support 30 doctoral students who also provide additional scientific research capacity through their studies with the JCDR as the co-ordinating organisation.

### **Additional network connections**

The ICoE:CR will collaborate actively with many organisations, government, industry, the community, and other researchers through the JCDR's existing connections. The centre has an extensive range of international partnerships with affiliates from University of Canterbury, New Zealand Red Cross, University of Otago, University of Auckland, University College London, East Tennessee State University, University of Oklahoma, University of Hawaii, Center for International Climate and Environmental Research (Norway), University of Central Florida, Museum of New Zealand Te Papa Tongarewa, University of Tasmania, Colorado State University, the National Institute of Water and Atmospheric Research (NIWA), University of Central Queensland, California State University at Long Beach, University of Moratuwa.

Current international research affiliates include<sup>4</sup>:

- Dr Stephen Edwards, University College London, UK
- Dr Lucy Easthope, University of Bath, UK
- Dr Chris Gregg, East Tennessee State University, USA
- Dr Eve Gruntfest, University of Oklahoma/NOAA, USA
- Professor S. S. L. Hettiarachchi, University of Moratuwa, Sri Lanka
- Professor Bruce Houghton, University of Hawaii, USA
- Assistant Professor Yasir Javed, COMSATS Institute of Information Technology (CIIT), Abbottabad, Pakistan
- Dr Steve Jensen, California State University at Long Beach, USA
- Dr Laurie Johnson, San Francisco, USA
- Dr Ilan Kelman, Center for International Climate and Environmental Research, Norway
- Dr Heather Lazus, University of Oklahoma/NOAA, USA
- Professor Pamela McCauley Bush, University of Central Florida, USA
- Professor Douglas Paton, University of Tasmania, Australia
- Associate Professor Lori Peek, Colorado State University, USA

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<sup>4</sup> <http://disasters.massey.ac.nz>

- Professor Kevin Ronan, University of Central Queensland, Australia
- Dr Tiziana Rossetto, University College London, UK
- Ms Helen Sinclair, County Fire Authority of Victoria, Australia
- Dr John Twigg, University College London, UK

### Example activities conducted within the last five years

The JCDR, which will be the co-ordinating organisation of ICoE:CR, has undertaken teaching and research by its own staff, affiliated graduate students, contracted researchers and affiliated research partners since its establishment in 2006. Over the last five years grants and core funding has equalled over US\$5 million.

Key areas of current research include:

- Emergency management planning
- Community resilience
- Land-use planning for disaster risk reduction
- Long-term welfare issues in recovery
- Role of public education in disaster preparedness, response and recovery
- Warning systems and evacuation planning
- Health sector emergency management
- Community involvement in emergency management
- Psychosocial recovery, resilience, and coping mechanisms to disasters
- Psychological consequences of exposure to disasters
- Use of appropriate technology for emergency management
- Support systems for disaster management

Key research outputs and outcomes are summarised in our JCDR Research Update, published electronically three times per year, archives of which can be found on the Centre's website<sup>5</sup>.

Staff and associates of the centre contribute to elements of degrees in arts and science across Massey University. The centre also hosts the Graduate Diploma in Emergency Management, Masters in Emergency Management and PhD (Emergency Management). A series of Emergency Management short courses have been organised by the centre since 2008, as part of an annual Summer Institute. This annual Institute attracts local and international students and speakers.

The Australasian Journal of Disaster and Trauma Studies is administered by the JCDR and hosted by the department of Psychology, Massey University in New Zealand. It is a peer-reviewed electronic journal utilising the Internet as a medium for the collation and distribution of original material on disaster and psychological trauma studies within Australia, New Zealand and the Pacific Rim. The Journal provides a forum for the publication of original research, reviews and commentaries which will consolidate and expand the theoretical and professional basis of the area. Coverage includes disaster and trauma mitigation and prevention, response, support, recovery, treatment, policy formulation and planning and their implications at the individual, group, organisational and community level.

As well as the wide range of teaching, research and engagement activities outlined above, personnel at the JCDR have been involved in advising government organisations in key areas of policy. These have included:

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<sup>5</sup> <http://disasters.massey.ac.nz>

- Psychosocial recovery following the 2010-2011 Canterbury earthquakes
- Pandemic response planning to the H1N1 event
- Community resilience indicators
- Public education design and evaluation

This experience will be well utilised in the proposed ICoE:CR, to both enhance policy across the region and nation through the application of research findings, while also meeting one of the IRDR's core principles to make science available and usable to political decision makers and government policy advisors.

### **How this ICoE will meet the IRDR Objectives:**

The overall vision of ICoE:CR is to develop the science-based models, methods, and metrics that provide empirically-based support for disaster risk reduction policies and community resilience practices.

This vision will be implemented in a number of ways. First, ICoE:CR will support the IRDR objectives of characterizing resilience through empirical measurements. This research program is based on the principle that the natural environment affords many benefits to societies and their members. However, the natural processes that afford these benefits (e.g., natural harbours and scenery from tectonic activity, rivers that facilitate trade) can occasionally become hazardous. Resilience is thus a process concerned with learning to co-exist with environmental processes that are occasionally hazardous. Resilience, at a practical level, then involves developing the capacity of people, communities and societies to cope with, adapt to and develop from hazard consequences. A second premise underlying this program involves understanding how mainstream community/cultural processes influence resilience (based on the premise that people's capacities derive primarily from their everyday lives). That is, understanding how 'everyday' community competencies & characteristics influence risk and the choices people make about how to manage their risk. This affords opportunities to implement resilience programs in ways that integrate risk management and community development through community engagement. This process increases the likelihood of sustained benefit as a result of its focus on developing social capital that can have benefits in everyday life and not just when disaster strikes.

A vision of ICoE:CR will be to provide some baseline support for four of the working groups of IRDR— Risk Interpretation and Action (RIA), Assessment of Integrated Research on Disaster Risk (AIRDR), Forensic Investigators of Disasters (FORIN) and Societal and Economic Research and Applications (SERA).

### **Funding**

The ICoE:CR will be funded through external research grants and contracts to undertake research and advice of relevance to community resilience. Grants are administered by either GNS Science or Massey University and funding transfers may occur via standard subcontracting arrangements between the two organisations. Both Massey University and GNS Science currently provide core funding to the co-ordinating organisation of the ICoE:CR through the JCDR, and Massey University has provided an additional NZ\$150,000 over three-years to assist the business development of the new ICoE:CR.

## Implementation and structure of this ICoE:CR

The ICoE:CR Management Group will consist of Prof. David Johnston (JCDR), Assoc/Prof. Sarb Johal (JCDR), Dr Emma Hudson-Doyle (JCDR), Dr Julia Becker (GNS Science), Mr Dan Neely (WREMO) and Mr Bruce Pepperell (WREMO). It will have a 5-7 person international advisory board to be established in consultation with the IRDR Scientific Committee, IRDR New Zealand, GNS Science and Massey University. At least two of the members of the advisory board will be from New Zealand and represent other large disaster centres; at least one additional member will be from the IRDR Science Committee. In this way, the advisory committee will be linked to both domestic and international research efforts as well as funding sources. If approved ICoE:CR can be fully supported, staffed, and operational immediately.

## Future Activities of ICoE:CR

In anticipation of becoming the co-ordinating organisation of ICoE:CR, the JCDR has initiated organisation of a number of future activities that meet the core goals of ICoE:CR. These include:

- On-going collaborative research between WREMO and research partners
- The World Social Science Fellows Seminar, Wellington & Christchurch, NZ, December 2013, “Decision-making under conditions of uncertainty”. In partnership with ISSC, ICSU, UNISDR, RIA Working Group of IRDR, ICoE Taipei and START
- Massey University/GNS Science Emergency Management Summer Institute, March 2014, Wellington, NZ
- The 7<sup>th</sup> Australasian Natural Hazards Management Conference, September 2014, Wellington, NZ

Through these activities, and international multi-disciplinary research, the proposed “IRDR International Centre Of Excellence in Community Resilience” (ICoE:CR) will make a major contribution to the IRDR’s key goal: “embody an integrated approach to disaster risk reduction”.