



Canadian Risk & Hazards
Network
(Knowledge and Practice)

www.crhnet.ca

HazNet

Réseau canadien d'étude des
des risqué et dangers
(connaissances et pratiques)

Volume 2 No.1 Fall 2010

WELCOME FROM THE CO- PRESIDENTS

Established in 2003 as a not-for-profit organization, CRHNet aims to promote or strengthen disaster risk reduction (DRR) and emergency management (EM) in Canada. It acts to establish a forum through which researchers, public officials and practitioners effectively share knowledge and strategies towards disaster risk reduction in Canada.

During the last 12 plus months, CRHNet has been instrumental in framing and advancing Canada's National Platform on Disaster Risk Deduction. The "Platform", which is Canada's formal response to the 2005 Hyogo Accord, is intended to be a pan-societal collaboration, one that will ultimately be led by non government actors. The Platform will be initially co-Chaired by Public Safety Canada and a representative of Senior Officials Responsible for Emergency Management (SOREM). It has an Advisory Committee of nine members, five of which are permanent and the rest are elected on a rotating basis. I am proud to report that CRHNet is a permanent member of the Advisory Committee, representing the academic community. I therefore encourage you to become a member of CRHNet and participate in our deliberations and activities.

CRHNet is again gearing its effort and resources to hold its annual conference. This year's conference – the 7th of its kind, is scheduled to be held in Fredericton, NB during October 27-29, 2010. (It is held immediately after the formal creation of the "Platform".) As its predecessors, the conference is unique in that it truly promotes reflection and integration of ideas that contribute to the safety and security of all Canadians. Don't miss it.

As an Association, CRHNet continues to formalize its structure and operations. During the last year, we

continued to make progress by strengthening our financial reporting, and other processes or structures. We updated our website and are continuing to populate it with valuable information to our stakeholders. Our current target is to further formalize our membership processes, to make it more meaningful to you while keeping our rates unchanged and affordable. I encourage you to become a CRHNet member and to contribute through the National Platform on Disaster Risk Reduction

Ron Kuban, Ph.D and Michel C. Doré, Ph.D,
CEM - CRHNet Co-Presidents

CANADA'S NATIONAL PLATFORM FOR DISASTER RISK REDUCTION

The inaugural Annual National Roundtable for Disaster Risk Reduction will be taking place October 26, 2010 in Fredericton New Brunswick, co-located with the 7th Canadian Risks and Hazards Network Symposium. A National Platform for Disaster Risk Reduction can broadly be defined as an assembly of interdisciplinary stakeholders brought together by their shared interest in reducing the risks posed by disasters and it seeks to build a sense of national, cross-sectoral ownership in the DRR process through coordinated leadership and action. To register for the Roundtable and the Symposium please go online at www.snb.ca/crhnet or www.snb.ca/crhnetfr.

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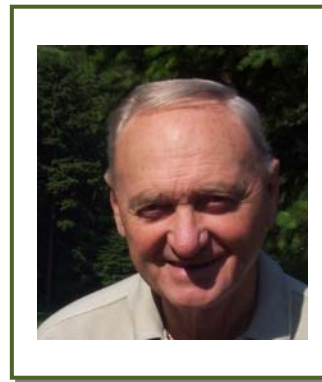
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NOTE FROM EXECUTIVE DIRECTOR



I would like to extend a warm welcome to all of the members of the Canadian Risk and Hazards Network to the third edition of *HazNet*. We are indeed fortunate to have so many terrific articles by Dennis Mileti,

Thomas Drabek, Ilan Kelman, Avi Kirschenbaum, Victor Smart, Elena Orrego and a number of students.

The last few months have been a busy time for the CRHNet and for the Board of Directors. There have been significant events which have enhanced and strengthened the network.

In the late Spring I was asked by the Board to seek proposals to revitalize the CRHNet web page and to explore a suitable contractor one who could create a useable and user-friendly website and host and maintain our site. This was accomplished and the Board approved the Justice Institute of British Columbia’s (JIBC) proposal. If you have not already done so, please check in and visit the new

CRHNet website www.crhnet.ca. The case study information for six events has been revised and includes web links to a variety of materials.

As the Board moves to tighten its administrative protocols I have developed a travel policy for the Board and staff members, in keeping with standard government/business practices. As well, through the leadership of the co-president Ron Kuban, a code of conduct was created to ensure that the Board and CRHNet's operations were carried out in a professional, accountable and transparent manner. Also, Ron directed that a useable enhanced membership control process be developed and we have a new membership form which is also included on the website.

I was asked by the Board to attend the World Conference on Disaster Management (June 6 to 9 2010) to promote the CRHNet's objectives and to



enhance membership and sponsorship opportunities. I was fortunate to be able to collaborate with one of our academic members: Royal Roads University. They were kind enough to print off 300 copies of the 2nd edition of HazNet, and to let me share their exhibit space. I was able to promote CRHNet and I'm happy to advise that all the copies of HazNet were quickly grabbed up! Also, to ensure that the 7th CRHNet Symposium, scheduled for October 27-29 2010 in Fredericton New Brunswick was given maximum exposure, 300 Symposium flyers were developed and printed and handed out. As a follow-up, I met in Toronto with Ernie MacGillivray, EMO Director Emergency Services, Public Safety New Brunswick, and Director of the 7th Symposium to

discuss the Symposium details. Do make sure you attend this exciting event! Check out additional information under the "Just Around the Corner" section of this edition of HazNet.

I, along with my wife Laurie Pearce, was invited to participate in the XVII World Congress of the International Sociological Association (ISA) held in Goteborg Sweden on July 11-17 2010. I was asked to be a moderator and session chair for several



sessions in the "Sociology of Disasters" section. Laurie presented a paper and served as a discussant as well. I was able to promote CRHNet and to make a number of contacts – three of those contacts – Ilan Kelman, Avi Kirschenbaum and Priya Gupta have sent us articles for this edition of HazNet. Unfortunately there were not many Canadians in attendance as it was a very interesting session to be part of. I have provided a brief overview of the ISA Congress and proceedings which is included under the "Topical Issues" section of HazNet.

As we look toward the next National Symposium this October in Fredericton, I challenge us all to help put the Network into the forefront and advance collaboration with our partners both in business and government and to work toward defining and developing the Canadian Disaster Risk Reduction Platform. In addition, I would like to extend a welcome to all of you who are not yet members and invite you to become members and to participate in future articles and symposia to enhance the mandate of CRHNet.

Larry Pearce
Executive Director Email: larrypearce@shaw.ca

What's Up in the Research World?

QUANTITATIVE NATURAL HAZARD RISK ASSESSMENT IN CANADA A PROJECT TO INCREASE DISASTER RESILIENCE

Bert Struik

*Geological Survey of Canada, Vancouver, BC
bert.struik@nrcan.gc.ca*

Project Goal

We plan to reduce risk and increase disaster resilience by building decision support for natural hazard risk mitigation, and to do so by conducting quantitative and qualitative risk assessments for the built environment, and various scenarios, and building risk assessment capacity. In particular the project, based on a global quantitative risk assessment technology evaluation (Journey 2010), has chosen HAZUS-MH as its primary quantitative risk assessment tool.

Method

To accomplish this goal we will provide, implement and promote the use of quantitative risk assessment tools among the full range of Canadian decision makers. We engage local groups conducting risk assessment through targeted case studies to better understand the needs and operational requirements for risk-based planning in large urban centres and lifeline corridors. Currently we work with the urban centre of the District of North Vancouver in southwest British Columbia and are developing critical-infrastructure partnerships in Quebec. We partner with national agencies to improve risk assessment capability and ensure connection between local and national risk assessment policy.

We work through three fundamental project components:

1. Adapt HAZUS-MH for use in Canada
2. Incorporate HAZUS-MH into a framework for integrated risk assessment & disaster resilience planning
3. Build capacity for the use of risk assessment

methods in support of disaster mitigation planning.

Adapt HAZUS-MH for use in Canada

Working with USA Federal Emergency Management Agency (FEMA), NRCan and its Canadian partners will develop a suitable adaptation of HAZUS-MH to work effectively in Canada. Those adaptations include a database structure that includes Canadian spatial-data divisions, and building types (yes, including the igloo).

Incorporate HAZUS-MH into a framework for integrated risk assessment & disaster resilience planning

We will build on the Pathways-DM model (Placeways 2009) which represents a first step in establishing a common framework for the assessment of risks associated with natural hazard threats in Canada. It is an integrated system of processes, methods and tools designed to assist planners and emergency managers:

- establish context and prioritize risk management objectives,
- analyze changing conditions of vulnerability and risk over time,
- characterize thresholds of risk tolerance that are relevant to a particular place and planning process, &
- navigate decision pathways that promote national policy goals of disaster resilience and sustainability.

Build capacity for the use of risk assessment methods in support of disaster mitigation planning.

We support three initiatives to develop local and national risk assessment capacity. These initiatives:

1. develop a national system for education and support for those who assess risk, including local training of Canadians in the use of HAZUS-MH, and a Canadian risk assessment users group,
2. building, with partners, a toolkit to build guides to mitigation decision support through risk assessment for urban centres and lifelines, and
3. supporting third party risk assessments that cross jurisdictional boundaries.

Who we are

We are the *Quantitative Risk Assessment Project* of the *Public Safety Geoscience Program* (2009 – 2014) led by the Earth Sciences Sector of Natural Resources Canada. The *Public Safety Geoscience Project* mandate is to increase the scientific knowledge about natural hazard threats in Canada, and to increase the capability of local and regional agencies to assess risks associated with growth and development in areas exposed to natural hazard threats. The *Quantitative Risk Assessment Project* work on risk assessment methods is focused on adapting and incorporating existing best practices into a framework for integrated risk assessment and disaster resilience planning.

For further information contact: Miroslav Nastev, Project Leader, at miroslav.nastev@nrcan.gc.ca

Partners (July 2010)

- Canadian Centre for Security Science
- Defense Research and Development Canada
- Public Safety Canada
- US Federal Emergency Management Agency
- District of North Vancouver
- University of British Columbia
- Justice Institute of British Columbia
- Simon Fraser University
- Queen's University

References

Journey, M.J. 2010: Integrated risk assessment: A survey of approaches and methods for use in Canada; Geological Survey of Canada, Open File 6276, in review.

Placeways 2009: Hazard Assessment and Planning: Linking natural hazard risk assessment and community planning using Pathways-DM ;
<http://www.placeways.com/communityviz/gallery/casestudies/pdf/Squamish.pdf>

PROFESSOR JAMES KENDRA NAMED NEW DISASTER RESEARCH CENTER DIRECTOR



The Disaster Research Center (DRC) at the University of Delaware is pleased to announce that as of January 1, 2011, Professor James Kendra will take on the role of Director. Professor Kendra

brings to DRC a diverse disciplinary background. A former merchant mariner, he worked for nearly 1500 days at sea aboard a variety of vessels in worldwide service. He received his PhD in geography at Rutgers University in 2000 and spent three years as Research Coordinator at DRC. Kendra comes to the University of Delaware from the University of North Texas, where he is currently Associate Professor and Program Coordinator of the Emergency Administration and Planning Program in the Department of Public Administration. His research emphasizes human-environment interaction, and he has published extensively in the areas of risk, resilience, and organizational responses to disaster.

DRC is the oldest center in the world focused on the social science impacts of disaster. Established at The Ohio State University in 1963 by Professors Enrico Quarantelli, Russell Dynes, and Eugene Haas, DRC moved to the University of Delaware in 1985. In addition to the founding directors, other directors have included Professors Dennis Wenger, Joanne Nigg, Kathleen Tierney, and Havidan Rodriguez. Professor Sue McNeil has served as director since 2007, helping to expand DRC's collaboration across the university to include eight core faculty, two affiliated faculty, three staff

members, and many post-doctoral, graduate and undergraduate student researchers.



Professor Kendra's leadership comes at a time when DRC has increased its multi-disciplinary focus and seen tremendous growth. Its projects include studies focused on use of warning and forecast technology, improvisation in sudden crisis, safer hurricane evacuation and sheltering, transportation corridors vulnerability and resilience, guidance for mitigation investments, delivery of critical supplies after disaster events, measuring post-disaster recovery, repatriation of disaster victims, and occupant response during building collapse. Known for its quick response research, DRC researchers have conducted reconnaissance field work after such recent events as the 2010 Haiti earthquake, the 2008 Wenchuan China earthquake, Hurricanes Katrina and Rita in 2005, the 2004 Indian Ocean Tsunami, and the 2001 Terrorist Attacks.

DRC looks forward to expanding its research family with the arrival of Professor Kendra, who will also join the faculty of the School of Urban Affairs and Public Policy and play an active role in the University's new graduate program in Disaster Science and Management. More information about the DRC can be found at www.udel.edu/DRC

AID TO RESEARCH WORKSHOPS AND CONFERENCES IN CANADA

Next Application: November 1 2010

The broad purpose of this program is to support workshops and conferences held in Canada. The program's specific objectives are to:

- advance research and scholarship on issues of intellectual, cultural and social importance by facilitating direct interaction among researchers and students, both from Canada and abroad;
- promote research linkages among disciplines and across institutions, sectors, linguistic groups and regions; and
- enhance the visibility and profile of social sciences and humanities research.

Grants are available to help defray the costs of organizing workshops and conferences. The value and period of tenure of a **workshop grant** is up to \$25,000 for a workshop held within 12 months following the announcement of competition results.

The values and periods of tenure of **conference grants** are:

- up to \$25,000 for a conference of up to 200 participants that is held within 12 months following the announcement of competition results;
- up to \$35,000 for a conference of 201 to 400 participants that is held within 12 months following the announcement of competition results; and
- up to \$50,000 for a conference of more than 400 participants that is held within the 12 months following the announcement of competition results.

http://www.sshrc.ca/SITE/apply-demande/program_descriptions-descriptions_de_programmes/conferences-colloques-eng.aspx

Emergency Managers' Centre

BRITISH COLUMBIA ASSOCIATION OF EMERGENCY MANAGERS (BCAEM)

During the past six months the BCAEM has been working on several significant projects to ensure that relevant information and practical resources are available to Emergency Management professionals. The online toolkit has over 70 templates, exercises, courses and plans that have been posted in WORD Format so that members of the Association may edit and personalize the material to ensure that it is relevant for their community.

This fall BCAEM will be launching our new website with an easier navigation site and we continue to expand resources and services for the membership. New this fall will be Mentoring and Coaching Services to assist new emergency managers and support for their programs.

The 2010 BCAEM Annual General Meeting will be held on November 23rd. at the Sheraton Wall Centre Hotel in Vancouver during the Emergency Preparedness Conference. The time and room will be announced on our website.

For more information about the BC Association of Emergency Managers and for membership rates, please check out our webpage at www.bcaem.ca

Lynn Orstad,

BCAEM Vice President

IAEM CANADA

For those that do not know us, IAEM-Canada (International Association of Emergency Managers) is an association of Emergency Management

professionals that unite in the common goal of promoting the profession in Canada while assisting in the development of standards and training to assist our members to grow within their field.

The International Association of Emergency Managers (IAEM), which has 5,000+ members in 58 countries, is a non-profit educational organization dedicated to promoting the goals of saving lives and protecting property during emergencies and disasters.

IAEM's Vision is to be recognized as a premier international organization of Emergency Management professionals. The mission of IAEM is to serve its members by providing information, networking and professional opportunities, and to advance the Emergency Management profession. IAEM created the Certified Emergency Manager and Associate Emergency Manager Programs to raise and maintain professional standards - an internationally recognized program.

IAEM-Canada involves federal, provincial, territorial, and local governments as well as private industry and NGOs. As of August 30, 2010 we have 293 members across Canada. We look towards the future for further development in Canada. If you are interested in promoting the field of Emergency Management in Canada, consider getting involved. I welcome you to contact me at **Catherine.blair@mississauga.ca** with your question and comments or visit **www.iaem.com**, Canada Council.

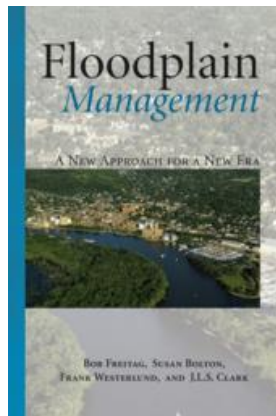


*Catherine Blair, HBSc, BSc, CEM
President, IAEM-Canada.*

Floodplain Management: A New Approach for a New Era

By: Bob Freitag, Susan Bolton, Frank Westerlund and Julie Clark

A flooding river is very hard to stop. Many residents of the United States have discovered this the hard way. Right now, over five million Americans hold



flood insurance policies from the National Flood Insurance Program, which estimates that flooding causes at least six billion dollars in damages every year. Like rivers after a rainstorm, the financial costs are rising along with the toll on residents as most scientists believe that global climate change will result in increases in flooding.

The authors of this book present a straightforward argument: the time to address adverse flood impacts is *before* the river floods. *Floodplain Management* outlines a new paradigm for flood management, one that emphasizes cost-effective, long-term success by integrating physical and biological systems with our societal capabilities. It describes our present flood management practices, which are often based on dam or levee projects that do not incorporate the latest understandings about river processes. And it suggests that a better solution is to work with the natural tendencies of the river: retreat from the floodplain by preventing future development (and sometimes even removing existing structures); accommodate the effects of floodwaters with building practices; and protect assets with nonstructural measures if possible, and with large structural projects only if absolutely necessary.

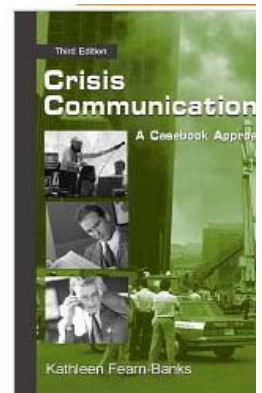
http://islandpress.org/bookstore/details72a5.html?prod_id=1916#bios

Crisis Communications: A Casebook Approach – 3rd Edition *By: Kathleen Fearn-Banks*

Book Mention by Laurie Pearce

I thought I would mention this book as we are using it as a text book at Royal Roads University and it has proven very popular with students and contains a lot of important and well-packaged information. It presents a number of cases studies such as Hurricane Katrina, the 1994 Los Angeles Earthquake, and the 1999 Columbine Tragedy. For each of these case studies Fearn-Banks provides a brief overview of the event and introduces examples of various briefing notes, pictures, and provides some analysis.

While heavily US-based, nevertheless Chapter 7 is over 50 pages long and is mostly focused on two non-USA based situations and events. Using the AIDS outbreak in Africa, Fearn-Banks compares various rumours and tactics for dealing with AIDS in Uganda, Botswana, Zambia, South Africa and other African countries. It is fascinating to note how the approaches to this deadly disease have varied from country to country. There is a section on Canada, dealing with the Chinese immigrant arriving by boat to Canada in 1999 – and now we are dealing with a similar situation regarding the Tamils. I found it interesting to compare what Citizenship and Immigration Canada did then, and how the current government is handling the situation.



Also of interest is the chapter on new technology and the use of blogs, websites and cell phones. There is a short chapter on crisis communication theory which is well laid out. All-in-all a book I found easy to read, informative, and well-researched.

Ensuring Your People Are Ready

Critical Incident Stress Management and Business Continuity

DRI CANADA is now offering a new lecture-style and hands-on role playing course in CISM and Business Continuity. Most business continuity planning concerns such as data recovery, IT systems, physical relocation and minimal if any interruption to service delivery. Business Continuity however, does not always account for human factors. Research shows that most people involved in a critical incident (trauma) will develop some stress reactions. Most will be mild, but the more intense stress reactions can interfere with one's ability to function properly in the midst of a crisis.

BENEFITS FOR BUSINESS include: providing Risk Management for adversarial situations and helping decrease litigious responses; helping prevent job stress and burnout problems, worker injuries/errors and associated costs; decreasing bottom line expenses for employers; promoting employee wellness and decreasing utilization of sick time and benefits; and stabilizing crisis situations quickly & effectively when they do occur.

The purpose of this course is to ensure the psychological well-being of an organization's best asset – people – so they may carry out the various plans that have been put in place.

DRI
CANADA
the institute for
continuity management

For a full list of our
course offerings,
please visit our
website.

www.dri.ca
1-888-728-3742

DRI CANADA College/University Affiliation Program

DRI CANADA a not-for-profit organization founded in 1996 to promote commonly accepted understanding of business continuity planning practices through education. With DRI International, our parent organization based in Washington DC; DRI CANADA sets baseline levels for the knowledge and capabilities for business continuity planning through well established Professional Practices. DRI CANADA certifies qualified business continuity planning professionals with the objective of promoting the credibility and professionalism of certified business continuity planning professionals.

The stated objective of the CRHNet is to *“Initiate the development of a Canadian inter-disciplinary and cross-sectoral network of researchers, academics and practitioners to enhance understanding of emergency management in all dimensions and help build Canadian capacity to deal effectively with threats and consequences from all hazards”*.

To this end, DRI CANADA has recently introduced a college and university affiliation program that provides DRI International's 10 professional practices as a basis for business continuity training. This Canada-wide program provides an opportunity to realize CRHNet's objective. In this way, practical, widely accepted, business continuity management practices can be introduced into an academic education curriculum; thus bridging the practical/academic training gap. All successful students may challenge the DRI CANADA certification examination without additional charge as part of the affiliation agreement.

DRI CANADA also welcomes the opportunity to distribute papers, theses and innovative research material to our network of professional practitioners, members and to the public in general in order to promote the benefits and achievements of academic research.

Please contact Grant Whittaker, Executive Director, DRI CANADA 1-613 258-2271 or grant@dri.ca

Just Around the Corner...

UPCOMING EVENTS/CONFERENCES

Workshop

Land-use Decision Support: Reducing Risk from Hazards

Friday, September 17, 2010

Simon Fraser University, 515 West Hastings,
Vancouver, BC

<http://www.sfu.ca/cnhr/workshops/index2.html>

Is your land-use plan creating a disaster or building resilience?

The SFU Centre of Natural Hazards Research, in collaboration with various partners will host a workshop to build a guide to planning land-use to build disaster resilience. The workshop brings together land-use planners, infrastructure operators, insurers, researchers, city managers and emergency managers, primarily from southwestern British Columbia. The more than sixty participants will use their experience, the outcomes of a simulated permitting for land-use in a hazardous area, and the overview of a keynote address on land-use issues to build the guide.

This workshop, and its accompanying simulation exercise, resulted from recommendations made at the September 28, 2009 workshop on risk mitigation systems, and which was hosted in Vancouver, BC by the same group of sponsors. Out of the numerous recommendations on risk mitigation made at that workshop, all of which can be found at

<http://www.sfu.ca/cnhr/workshops/download.html>

Following this workshop, land-use practices were recognized as key to disaster resilience.

Land-use practices that take into account hazard risk rely on a complicated system of governance, knowledge access, risk determination and the permitting process, that are based in system of legislation and regulation. The workshop will examine each of these themes outside of the regulatory system. The collated knowledge will be presented for evaluation at the 2010 CRHNet Symposium in Fredericton New Brunswick, October 27-29, and at the 2010 Emergency Preparedness Conference in Vancouver, British Columbia, November 22-24. The draft will be available for comments in early 2011, and its publication is meant to represent the first iteration of a guide that will be iteratively reviewed and improved over time.

The simulation exercise to be staged Monday September 13, 2010 in the Simulation Laboratory of the New Westminster campus of the Justice Institute of British Columbia. Experts in land-use issues will cloister themselves in separate morning and afternoon events where they evaluate development applications following processes they are familiar with, and make a recommendation on how to proceed with those applications. Evaluation of the evaluation process will be presented at the Friday workshop.

Out of this exercise and workshop we hope to have 1) a first order guide to land-use planning that builds disaster resilience, 2) a mechanism for jurisdictions to evaluate their land-use processes, and 3) a stronger network of mitigation practitioners.

Partners

Financial and in-kind support for the exercise and workshop come from the SFU Centre for Natural Hazards Research, Natural Resources Canada, the Justice Institute of British Columbia, Pearces2 Consulting, the Integrated Partnership for Regional Emergency Management, Public Safety Canada, the District of North Vancouver, the UBC School of Community and Regional Planning, and the numerous communities and agencies who have supported their staff to contribute to these events.

For further information contact:

Bert Struik at bert.struik@nrcan.gc.ca or John Clague at jclague@sfu.ca



planning/coordinating a first responders seminar on October 20 and 21, 2010. The seminar entitled "Front-line First Responders - An Integrated Approach" is a first of its kind held in the Lower Mainland.

The seminar objectives are:

- to continue developing collaborative approaches with front-line first responders following from lessons identified during the 2010 Winter Olympics; and
- to develop strong working relationships to enable seamless integration during large-scale, man-made or natural disasters.

Topics covered include:

- Integrated Public Safety during the 2010 Olympics
- Establishing functioning Departmental Operations Centres during pre-planned or unplanned events
- Integrated CBRNE teams
- Utilization of Mind Mapping for Incident Action Planning
- International Public Safety Events in Canada - From Planning to Implementation
- Unified Command in Major Emergencies – What is Best Practice
- Mass Fatalities in Disasters - Disaster Victim Identification and Critical Incident Stress
- The Road Ahead - Future Relationships between Front-line Responders in BC

We have invited outside speakers from Los Angeles, Toronto and Ottawa in addition to our Lower Mainland counterparts.

As the focus of this seminar is a collaborative approach with front-line responders, we are inviting agencies to consider attending this two-day event in October. Attached is our promotional brochure, including registration information. You may also download the information directly from the VPD website at:

We look forward to seeing you in October.

<http://internal.vancouver.ca/police/assets/pdf/2010-front-line-first-responders-conference-brochure.pdf>



Front-line First Responders – An Integrated Approach

October 20 and 21, 2010, Vancouver, BC

The Vancouver Police Department's Emergency Planning Unit, in conjunction with Vancouver Fire & Rescue Services and BC Ambulance Service, has been working on



**Canadian Risk and Hazards
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Network**

**Réseau canadien d'étude
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**7th Canadian Risk and Hazards Network (CRHNet) Symposium
"Connecting With Canadians"
October 27 – 29, 2010
Delta Fredericton Hotel, Fredericton, NB**

A consistent goal of the CRHNet symposiums is to create a disaster-resilient society through inter-disciplinary and inter-jurisdictional dialogue or collaboration among practitioners, policy makers, researchers, and academics.

The overarching theme of this year's symposium, "Connecting with Canadians" reflects the need for better public engagement in disaster risk reduction. This year's symposium will focus on the knowledge and practice of public engagement in the general context of risk reduction.

The 2010 symposium will help identify *smart practices* and *lessons* from recent disasters. This year's symposium will also include *practical demonstrations* of innovative technology solutions for risk assessment, information management, inter-agency collaboration and decision support.

Presentations will be grouped into four general themes:

- Health sciences or services, including the psychosocial dimensions of emergency management and lessons learned from the recent pandemic.
- Natural sciences, including risk assessment methodologies, climate change adaptation strategies, risk mitigation and multi-discipline collaboration.
- Social sciences or services, including public attitudes about risk and emergency management, public participation, the use of social media and social networking in crises and emergencies, community resiliency strategies and emerging trends in emergency social services.
- Governance, policy and management, including stakeholder-engagement strategies, collaboration strategies for policy development, communication strategies, land use planning strategies, spatial decision support systems, warning systems, incident management systems, crisis management systems or strategies.

CALENDAR OF EVENTS

Tuesday, Oct 26th Afternoon
National Platform for Disaster Risk Reduction & Reception

Wednesday, Oct 27th All Day
Day 1 of CRHNet Symposium

Thursday, Oct 28th All Day
Day 2 of CRHNet Symposium & Banquet

Friday, Oct 29th until 4pm
Day 3 CRHNet Symposium

REGISTRATION

Contact Shannon Myers

Email: shannon.myers@gnb.ca

Phone: 1-800-561-4034 (0800h – 1500h EST)

Fax: 506-453-5513

Starting September 8th Register Online at:

www.snb.ca/crhnet (English)

www.snb.ca/crhnetfr (French)

RATES (includes National Platform Registration)

Member \$350

Non-member \$400 (includes 1 year CRHNet membership)

Student \$100

CONFERENCE HOTEL

Delta Fredericton
1-888-462-8800



Public Safety
Canada

Sécurité publique
Canada



The 23rd Annual Emergency Preparedness Conference

November 23rd, 24th, 25th,
2010



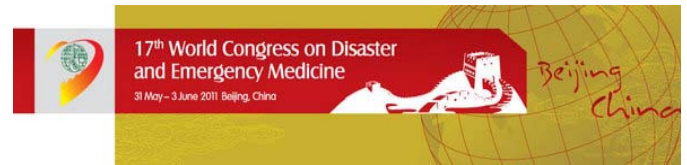
DECADE FOR CHANGE: PLAYERS, POLITICS AND PLANNING

The 23rd Annual Conference will be covering topics relating to Players, Politics and Planning. Some of the topics will cover:

- Earthquakes – Haiti: a Major Catastrophe
- H1N1 Lessons learned for the next Pandemic
- Non-government partners in Emergency Management:
- Challenges facing governments, communities and citizens in the next decade
- Training Challenges for the Next Decade
- Balance priorities – Public Safety and Community needs
- Cross Ministry response – who takes the lead?
- Linking Emergency Preparedness with Financial Security
- Making Governments Accountable – the buck stops here
- Olympic Legacies as it relates to normal operations
- Self Rescue – Care facilities, high-rises, public safety system, and elementary schools

This Conference provides a great opportunity to network and learn from peers. Delegates are given the opportunity to browse the Exhibitor Area the Poster Presentations.

Check out the Web Site at www.EPConference.ca – the new completed 2110 Conference Program will be up and running shortly.



CALL FOR ABSTRACTS

The 17th World Congress on Disaster and Emergency Medicine (17 WCDEM) invites you to submit an abstract(s) for poster or oral presentations - May 31 to June 2011 in Beijing, China

Important Dates for Abstract Submission and Presenting Authors

- Abstract Submission Deadline: 1 December 2010
- Author Notification of Acceptance: 31 January 2011
- Deadline to Confirm Presentation: 13 February 2011
- Presenting Author Registration Deadline: 30 March 2011

For abstract submission guidelines and to submit an abstract, please visit:

www.wcdem2011.org

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December 5 - 8, 2010

(Sunday evening to Wednesday afternoon)

The Fairmont Empress, Victoria, BC

Registration Cost: \$450 + HST(\$504.00), includes all plenary sessions, Sunday evening meet and greet, Monday evening exhibitors reception, 3 breakfasts, 2 lunches and 5 refreshment breaks

The Fourth Canadian Public Safety Interoperability Workshop aims to again bring together a broad base of public safety and emergency management practitioners to develop a mutual understanding of the key voice and data -interoperability issues facing today's public safety sector. With a focus on information exchange, topic-specific discussion and interactive break-outs, this workshop aims to support and promote the transfer of best practices and experience, and the development of a more unified approach to public safety interoperability across the country and internationally.

Once again delegates can expect to be "put to work" in extensive break-out sessions. While some of these sessions are designed to continue the development of the Canadian Communications Interoperability Plan, others will focus on providing support and assistance to regional delegates as they begin, or further, the development of local, regional, provincial and inter-provincial Communications Interoperability Plans. Delegates will come away with real-world insights, practical knowledge, and a common sense approach to moving forward and will be provided with numerous tools they can take home and begin working with immediately.

Registrations must be made in advance, online at www.cacp.ca. For those without Internet access please call (613) 233-1106 for further assistance.



2011 WCDM Toronto Call for Presentations

Deadline to Submit - November 26, 2010

The World Conference on Disaster Management (WCDM) is proud to be the premier annual event for disaster management professionals, providing a global perspective on current issues and concerns in the industry. The 21st WCDM will bring delegates from over 40 countries. A major goal of the WCDM is to offer a program that challenges delegates by examining traditional concepts and methods, and provides:

- new ideas and approaches to problem solving
- both leading edge and topical presentations
- opportunities to connect with key individuals and organizations across the disaster management spectrum

Submission of Abstracts

The WCDM and the Canadian Centre for Emergency Preparedness (CCEP) is now calling for presentations for the 21st WCDM taking place June 19 - 22, 2011 in Toronto, Canada.

The 2011 Conference theme will be based around: **Innovation Solutions to the Increasingly Complex World of Disaster Management.**

Please visit our web site at: <http://www.wcdm.org/Toronto/call-for-papers.html> to access the Call for Presentations. If you have any questions please call Adrian Gordon at (905) 330-4069 or email: agordon@ccep.ca.

JUSTICE INSTITUTE OF BRITISH COLUMBIA

New Bachelor's Degree a First in Preparing Canada's next Emergency Management and Security Leaders

The Emergency Management Division at the Justice Institute of British Columbia is pleased to announce the implementation of the Bachelor of Emergency and Security Management Studies program — the first bachelor's degree program in Canada to integrate emergency management and security studies with business fundamentals. The program is offered completely online, making it accessible to current and aspiring emergency management and security professionals anywhere in Canada and around the world.

The degree program builds directly on the existing Diploma in Emergency and Security Management, giving students a choice of credential to pursue. After the first 60 credits of course work they can complete a capstone project and graduate with a diploma, or they can continue with another 60 credits of course work, including a degree capstone project, and graduate with a Bachelor of Emergency and Security Management Studies.

A comprehensive program, the Bachelor of Emergency and Security Management Studies offers courses in the traditional areas of emergency management, such as public safety, business continuity, and crisis management, along with more security focused courses including intelligence analysis, critical infrastructure, and information security management. With additional leadership and administration courses, the program prepares aspiring professionals to take on management and leadership positions.

Graduates of the program will be candidates for positions in emergency management, security, public safety, risk management, and business continuity with municipal, provincial, regional, and federal emergency programs; healthcare organizations; educational institutions; international organizations; private security agencies; utilities; and private corporations in areas such as transportation, natural resources, gaming, hospitality, and recreation.

Online classes have begun for the first cohort in the program with students from BC, Alberta, Manitoba, Ontario, and Quebec. The group is diverse, with mid-career professionals, as well as students re-entering the workforce and changing careers. Students hail from a number of different sectors: government, oil and gas, health, forestry, education, police and police dispatch, transit, airport operations and security, broadcasting, private security, and non profit.

More information on the degree program can be found at www.jibc.ca/emergency.

ROYAL ROADS UNIVERSITY

Masters of Arts in Disaster and Emergency Management

I wanted to share news about the expansion of our graduate programs at Royal Roads University. Beginning this fall, there are now *two* program streams for the Master of Arts in Disaster and Emergency Management (MA-DEM) program. The courses taken in each stream are the same, except for the applied skills course, and the same degree is awarded. Both streams are now 33-credit programs. The decision to create a second stream was based on market demand and prospective applicant expression of interest.

NAIT Emergency Management Program

For more information, email emtraining@nait.ca
or check out NAIT's website at www.nait.ca/em.

YORK UNIVERSITY

For more information please go to
<http://www.yorku.ca/akevents/academic/AS/EM/index.html> or send an email to
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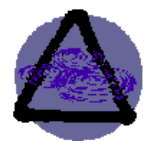
BRANDON UNIVERSITY

Applied Disaster and Emergency Studies

More information about the ADES program,
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degree requirements can be found at
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1. NEW General Stream (Fall start – next intake November 8, 2010, application deadline October 7th)

This stream is geared to those with a relevant undergraduate degree and who aspire to work in the field, but who have less than five years of relevant disaster or emergency management experience. Students in this stream take the Practicum as their applied skills course.

2. Practitioner Stream (Spring start – next intake April 18, 2011)

This stream is for those applicants who have at least five or more years of management experience in the disaster and emergency management field. Students without an undergraduate degree will be assessed under the flexible admission policy. Students in this stream take the Capstone Project as their applied skills course.

Starting in the spring of 2011, we will offer a **Graduate Diploma in Disaster and Emergency Management**. This is a one-year 18-credit program that is course based. Students will follow the same program of study and will be in the same classes as those taking **MA Practitioner Stream**; however they will not take the research course or complete a major research project

We appreciate your assistance in passing on the word about the expansion of our program and the new program options. Further information is available on
<http://www.royalroads.ca/program/disaster-and-emergency-management-ma> or
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Jean Slick

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Ideas

KEY CONCLUSIONS FROM DISASTER RESEARCH: CASE STUDIES IN TENACITY

By: Thomas E. Drabek, Ph.D.

Tenacity. While varied definitions can be found, this term highlights an important lesson I learned years ago from several local emergency managers. They had *visions* of what they wanted their agencies to become. Despite setbacks and delays, and some refinements in their visions over the years, they walked the walk. I never will forget my sense of humility and appreciation as I slowly obtained a glimpse of what they were up against.

So too, my recent book—*The Human Side of Disaster*—is a case study in tenacity. This book (Drabek 2010) had its origins in a course, I first offered in 1974! During the next thirty years at the University of Denver, “Community Response to Natural Disasters” was offered annually. Students were encouraged to read a variety of textbooks that supplemented my lectures. Among these were summaries prepared by Mike Lindell and Ron Perry (1992) and Hank Fischer (1998). In addition, I provided reprints of a few of my journal articles (e.g., Drabek 2000; Drabek 2005) and placed some books on library reserve for special assignments (e.g., Rodriguez et al. 2006; Drabek 1986). A disaster case study, like the excellent analysis of Hurricane Andrew completed by a team from Florida International University (Peacock et al. 1997), rounded out the core required readings. But I never felt like I had the best text to give undergraduate students an overview of the sociological research literature on disaster responses. New grant proposals, disaster field work, university administrative chores, classroom responsibilities, final research project reports, and

other obligations took my eye off the ball every time I started to write a book for this class.

I retired from the University in June, 2004. Three years later, faculty leaves and hiring delays caused some holes in the teaching schedule. I was invited to return to the classroom. But this time I decided to write the book I always had wanted. So, with my wife’s assistance, I prepared the first draft of *The Human Side of Disaster*. Photocopies were sold to students for the reproduction cost. I repeated the course the next year (2008), and kept accumulating ideas for updates and revisions. A chance meeting during the 11th Annual FEMA Higher Education Conference resulted in a contract with CRC Press. Again, aided by my wife’s sharp editorial eye, I pressed harder to achieve my goal—summarize key social science research findings in a manner that was readable, yet intellectually sound and evidence based.

Disaster events are inherently interesting. So I decided to introduce my reader’s to some people who were like the hundreds I had interviewed during my many field studies. Thus, the first chapter is comprised of four fictional short stories that are rooted in real events. These provided my students with a set of shared experiences that added much meaning to specific research findings and core conclusions that followed.

We know, for example, that when people receive a disaster warning they don’t stop what they are doing and immediately flee in panic. Rather, if they do anything, they will try to confirm the information. But the social pathways of message confirmation are many and produce different results. Also, there are important pattern variations. Older people, for example, are less likely to get the message in the

first place and will seek confirmation without trying to text or twitter. Not all, of course, but most.

If convinced to leave their homes, most will seek refuge with extended family or friends. And they will stay together except under specific circumstances. In the days after impact, many will be aided by relatives and friends. And frequently, before this aid is received, they—the survivors—will help others whom they encounter. Catastrophic events impacting vulnerable populations—think Hurricane Katrina—produce important pattern variations. So these conclusions about “typical” response patterns have to be qualified. We are just beginning to get a sense of the *limits of generalization* as more comparative studies are done. We know we have exceptional cases regarding many conclusions, but exactly what defines these awaits further study.

Organized-disorganization best characterizes the mass assault of emergency government, private sector organizations and a wide variety of volunteers. Executives in such agencies frequently discover that cooperation runs high. It is greater than most have ever experienced, at least since their last brush with disaster. Yet, they often sense limited multiagency coordination. Why this happens when everyone means so well usually remains a mystery. Through the use of social maps, my book helps readers solve this mystery.

Depending on the scope of impact, and other event characteristics, the “bitch phase” of human responses emerges as initial recovery actions begin. For some disaster survivors, the bureaucratic nightmares they now confront are as traumatizing as the initial event. Research tells us that years afterwards, most disaster victims—but not all—bounce back. Most sense changes, however. Somehow material possessions just don’t seem as important as they once were. Family and friendship relations are of much greater value. When more vulnerable populations—think Katrina or Haiti—comprise much of the impacted population, these

results are less true. Resilience is compromised by poverty. Tenacity, like choice, is constrained for those crushed by oppression, regardless of the source or form.

Emergency managers are aspiring towards new levels of professionalism. Those who understand the many pathways through which community resilience can be increased and vulnerabilities reduced, will best serve their constituents. But unless they push to understand and implement a new vision, *they will fail*.

What are the key elements of this new vision? First, and foremost, a far more strategic view of the profession must be embraced. Emergency management cannot be limited to the implementation of narrowly defined bureaucratic procedures. Rather, the vision must start with an understanding of why disasters should be *conceptualized as nonroutine social problems*.

From this perspective, victims cannot be blamed for their plight. Nor can response protocols be the major focus of emergency managers. Rather the *root causes* of disasters, including the social processes that produce differential distributions of risk, must guide new public policy approaches to enhance risk reduction and increase community resiliency. As with any other social problem, societal elite greatly influence the emergency management policy agenda, either directly or indirectly. Hence, the proposed new paradigm recognizes such influence and the resulting barriers that frequently neutralize efforts to bring about required reforms that better reflect such community values as equity and justice.

Without such structural reforms, the profession can only apply one Band-Aid after another, rather than addressing the root causes of future disasters. The vision is clear, but the professional leadership, political will, and tenacity requirements remain problematic. These are the key challenges that await the energies and talents of those within this profession who will move it forward. Those who are

less dedicated will continue to simply “piss in the ocean.”

And as they do, many disaster survivors will in fact be helped through their efforts. That’s the good news, and it should not be forgotten or ridiculed. Helping even one person or saving even one life, is commendable. But members of this profession should aim higher. And that will require far more insight and awareness of the root causes of disasters and the systemic changes required.

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Introduction

Disasters such as climate change frequently affect peace and conflict at many levels and in varied ways. Disaster diplomacy (see the following website <http://www.disasterdiplomacy.org>) is one framework for exploring such interactions. Conclusions from this work to date suggest that disaster-related activities can catalyze and influence ongoing diplomatic processes but cannot create new peace without a pre-existing basis. Such conclusions need to be further investigated for long-term disasters such as climate change.



One of Fiji's outer atolls, highly vulnerable to sea level rise (photo by Ilan Kelman).

One example is the potential for the destruction of low-lying islands through phenomena associated with climate change. Possibilities are sea-level rise, inundation from storms, or changes to freshwater, geomorphology, ocean acidity, or fisheries so that islands become uninhabitable. None of these impacts is inevitable and large uncertainties remain, but exploring the possible planning consequences is prudent, which must include the potential for evacuating islands permanently. Some themes on

the ethics and legalities of island evacuation are examined in this article.

Disaster diplomacy and islands

Disaster diplomacy examines how and why disaster-related activities do and do not reduce conflict and create peace. All disaster-related activities are covered: pre-disaster such as prevention and risk reduction plus post-disaster such as response and recovery.

Dozens of case studies show that disaster diplomacy has a poor success rate. In the short-term, over weeks and months, disaster-related activities frequently have the potential to affect diplomacy—to catalyze it, to influence it, and to push or pull it along. For that to happen, a pre-existing basis must exist for the reconciliation. That basis could be ongoing secret negotiations between political enemies or cultural and trade links, formal or informal.

The 26 December 2004 tsunamis around the Indian Ocean provide a useful case study. In Aceh, Indonesia, a peace deal resulted after the tsunami. Secret negotiations had started between the Indonesian government and the Aceh fighters just two days before the tsunami. Those negotiations formed the basis for the peace deal. Consequently, the tsunami did not create the peace, but it created conditions that permitted an ongoing peace process to succeed.

Over longer time periods, non-disaster factors have a more significant impact on diplomacy than disaster-related activities. Examples of non-disaster factors are leadership changes, mutual distrust, belief that an historical conflict or grievance should take precedence over present-day humanitarian needs, or desire for conflict.

Sri Lanka after the 2004 tsunamis provides an example. On that island, little pre-existing basis existed to help peace in the short-term, but reasons abounded for continuing the conflict. For instance,

one rebel leader was facing corruption accusations and had a strong incentive to continue fighting. Those other reasons dominated efforts at conflict resolution and efforts at post-tsunami aid.

One disaster for which disaster diplomacy has been investigated is climate change, while one case study severely affected by the disaster of climate change is islands (see <http://www.islandvulnerability.org>). Climate change is expected to hit islands particularly hard, so islanders themselves are increasingly vocal about what that will mean for them.



Selling the day's catch on Tongatapu, Tonga (photo by Ilan Kelman).

One example is the program Many Strong Voices (see <http://www.manystrongvoices.org>). Indigenous people from the Arctic, many of whom live on numerous islands, along with those from Small Island Developing States (SIDS; see <http://www.sidsnet.org>) joined together and asked for support for dealing with climate change. The result was the Many Strong Voices program dealing with climate change within the wider contexts of day-to-day life and century-to-century societal planning. The program deliberately connects science, policy and practice.

Several scientists from the Intergovernmental Panel on Climate Change (IPCC) who are from SIDS are involved and they contribute to Many Strong

Voice's research agenda. One priority that they identified was wanting to know more about the potential need to evacuate islands or island countries.

Island Evacuation: Uncertainty of impacts

Numerous climate change impacts are seen and expected, but none are certain in terms of their impact on island inhabitability. Even sea-level rise is controversial because complete inundation and drowning of the islands is not inevitable. The empirical evidence available from the tropics shows little evidence of islands disappearing directly from climate change. That empirical evidence does not cover all island types nor does it project into the future. Plus, even if the islands do not disappear, they might be difficult to live on.

In the Arctic, erosion inland is proceeding rapidly in some places, forcing several island communities to explore swift relocation. In the tropics, some cyclones build up coral rubble walls that are larger than some of the islets on which people currently live. Such extremes, even though they build up the land, might make living there impossible if such an event happens every few years. Thus, severe physical changes might lead to an island being unliveable even if those changes are island building rather than island drowning, especially if fresh water is affected. In fact, changing freshwater resources are frequently highlighted as being a principal climate change concern.

Similarly, changes in marine resources are important. Fish numbers might decline in many places and some species might go extinct, but others might migrate giving some islands major food challenges and other islands major food gains, but alongside large ecosystem changes. Ocean acidification will likely kill coral reefs, exposing the islands to waves and changing the near-shore fisheries. That might also impact dead coral rubble and shingle beaches, impinging any building processes.



Fishing as a livelihood off the shore of Tongatapu, Tonga (photo by Ilan Kelman).

In this text several “mights” have been used. No impact is certain. With all these unknowns and uncertainties, what can and should islanders do about evacuation and about the sustainability of their land, livelihoods, and cultures?

Decision making

Island evacuations have happened on many previous occasions, including for climate-related reasons but also due to volcanic eruptions and nuclear testing. These examples reveal a wide range, from the people self-evacuating with no external help to forcible evacuations by authorities.



House on Upolu, Samoa which was damaged by Cyclone Heta in January 2004 (photo by Ilan Kelman).

Ethically, questions arise regarding who decides regarding evacuation, such as the timing, method, and destination for evacuation. Legally and ethically, any decision needs to be enforced. By whom? Who pays for the decision-making process, for enacting the decisions, and for enforcing the

decisions on those who disagree? Ethically, should richer countries pay the poorer countries, especially considering that the richer countries can be blamed for a significant part—but not all—of the climate change problem that the islanders face?

Is it appropriate to apportion blame? Moral blame, as in identifying the realities of who caused the problem, and legal blame, as in taking the perpetrators to a formal court and trying to convict them under international law. For dealing with the people who are affected and for making the needed decisions, does blame matter? If so, should blame be attributed for climate change? Or should blame be attributed for the inter-state social and power structures which mean that the islanders do not have the resources or choices to deal with climate change themselves?

If islanders select and pursue evacuation, whether or not it is needed, the islanders must move somewhere. Legal and ethical questions emerge regarding sovereignty and autonomy, of the islanders in their new location and over the abandoned islands. A scramble for fish, minerals, oil, and other resources is likely. If the islanders wish to preserve the natural heritage or use the natural resources for themselves only, do they have that legal and moral right? Could territorial waters or abandoned land be exchanged for territory in a host state or for funds to build a new community?

For social aspects, if laws on capital punishment differ between the island state and the place of settlement, which law should prevail? Who has the moral right and legal authority to choose levels of sovereignty and cultural customs for resettled islanders? If one country, such as Canada, pays for islander resettlement, can the donor country demand that certain islander laws or customs should change or remain?

Climate change diplomacy

Trying to answer these questions operationally could lead to inter-state conflict. Even amongst

islanders, disparate views prevail. Meanwhile, researchers debate the appropriateness of the terms “climate (change) conflict” and “climate (change) refugees”.



Children near Nadi, Fiji: They must deal with the full effects of climate change (photo by Ilan Kelman).

While research on these topics rapidly expands, the policy level tends to sidestep them—just as it has been sidestepping the needed emissions reductions to tackle climate change. Preventing inter-state conflict over island evacuation due to climate change is feasible. The islanders will be suffering enough due to climate change and disaster diplomacy could be actively implemented now to assist islanders in need. Realistically, given the disaster diplomacy and climate change patterns from the past, and continuing to emerge, it appears as if such steps are not likely to be taken until decisions are forced by urgency or calamity; that is, until it is too late.

Given this situation, is the enemy the environment and climate change? Or, when it comes to disasters and diplomacy, and thinking about sustainability and development, is the enemy ourselves and humanity’s inability to properly deal with what the environment yields, whether that be volcanic eruptions or fossil fuels?

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Barbados (photo by Ilan Kelman)

FROM THE BOTTOM UP: ADAPTIVE SOCIAL PROCESSES FOR ORGANIZATIONAL SURVIVAL

By: Alan (Avi) Kirschenbaum and Carmit Rapaport

Planning the Impossible

Being totally prepared for a disaster or an emergency is virtually impossible. As disasters vary in type, strength, and impact there may be no one appropriate method or preparedness plan that could encompass all potential hazards. Evidence that organizations experience and respond differently to the same non-routine events, according to their size, sector, ownership and managerial risk perceptions, support the notion that pre-designated plans are problematic. As a result, organizations tend to depend on external help of emergency agencies, which may take critical time to arrive and would not necessarily fit the specific organization's needs. Furthermore, even on the basis of past experience, organizations in general and managers in particular can not rely on previous responses as each event is unique, and the people involved may change. In fact, organizations' managers do not tend to make long-term decisions quickly during emergencies. Thus, many of them avoid taking any decision, and just follow the event unfolding and its consequences.

If this is the case, it seems that emergency managers are trapped: on one hand, when preparing for the future, preparedness planning is not always effective, while on the other, relying on the past can be problematic. What would be, then, the most appropriate response when handling a case of an emergency? We suggest, based on recent evidence from our research in Israel that you base your response on the present! There is no doubt, as you will see from our study, that existing social relations among employees would enable an adaptive adjustment to the new conditions imposed by an

emergency which in turn will lead to organizational resilience.

Misplaced Concreteness

Until now, emergency managers generally subscribed to the conception that during and after emergencies and crisis, an organizations' mission is to guarantee "business continuity". In other words, business continuity is the outcome of proper management of an emergency event. We, however, claim that survival is the organization's main target, while "business continuity" is the process leading to survival. This claim is based on a comprehensive study of economic-based organizations' response to a continuous emergency situation, namely 33 days of constant missile attack on Israeli population centers during the 2006 Israel-Lebanon war. Our findings clearly support the notion that this process is socially-based and expressed in stronger social connections, intensified information dissemination and enhanced helping behaviors among employees and managers. During disasters people tend to rely on each other and adapt their behavior and actions as a way to assure their survival: calling your family members to consult where to go in case of a coming storm, asking your colleague what to do when the alarm goes off suddenly in the factory, helping a friend in need to find a better shelter, and improvise in order to find the best temporary solution when there is no other way. All these adaptive behaviors were found to save lives and enable routine in the organization, and are all based on social behavior. Neither rules, regulations nor procedures have the impact that cooperation, experience in different situations, and social cohesion have on enhancing adaptive behavior; all of which positively affect continuity.

Social Resources

For organizations experiencing an emergency or crisis, the same social resources should be utilized to achieve resilience. On the one hand, employees would be naturally adaptive and enhance operational continuity with this adaptation

magnified if managers pay special attention for arranging a suitable environment (setting an appropriate administrative framework) for such a social adaptation. In fact, no strict instructions should be given as to how to act but rather, managers should allocate resources, coordinate and disseminate information that will allow employees to behave adaptively according to the demands of the new situation. This, for example, includes, allowing employees to work partial time shifts, and bring their children to work place.

The model presented here (fig. 1), based on results from questionnaires and interviews with employees and managers (at different levels and positions) from 21 organizations ranging from private manufacturing and service companies to public and governmental agencies), shows how adaptive behavior of employees and managers is based on intensified social relations and information flow. In addition, when managers loosened the work regulations (i.e., allowed working part time, during night shifts when there were less attacks etc.) and invested in improving employees welfare (i.e., arranging transportation to work and back home, special shelters, took care of employees with little children) adaptive behavior came to the forefront. It is also important to note that when employees perceived management functioning as appropriate to the situation, it had an effect only on the perception of routine. However, it had *no* behavioral consequences leading to enhancing organizational resilience.

The Foundation for Continuity

These results provide the evidence that adaptive behavior is primarily and significantly derived from social factors. We can summarize these findings that indicate three types of core adaptive behaviors characterizing employees and managers during disasters: (1) occupational adaptation, (2) personal adaptation, and (3) social adaptation. .

Fig. 1: Structural model predicting emergent adaptive behavior

(The numbers indicate the strength and direction of the correlation. *significant at the level of $p < 0.05$, ** significant at the level of $p < 0.01$)

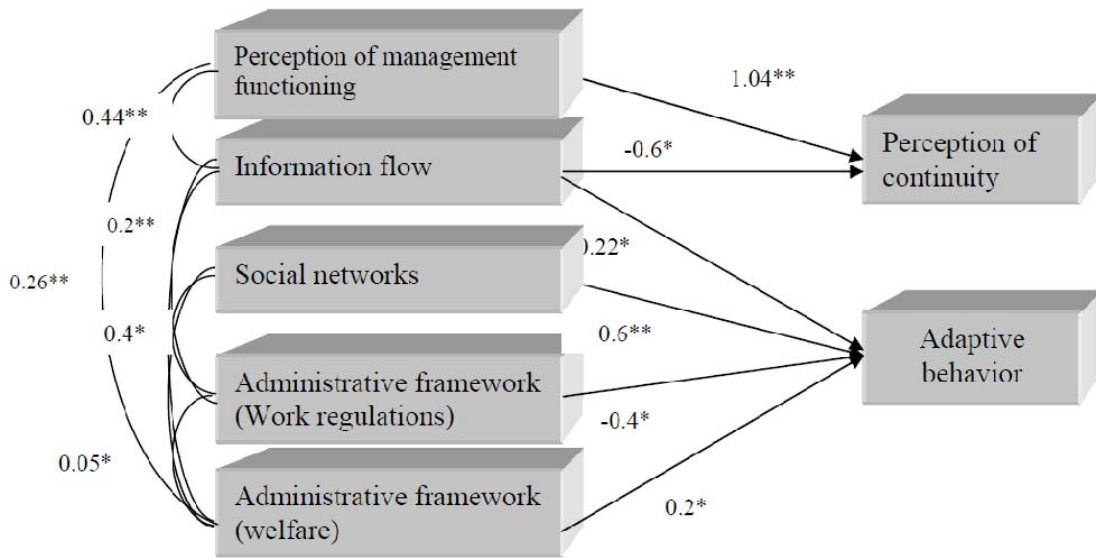
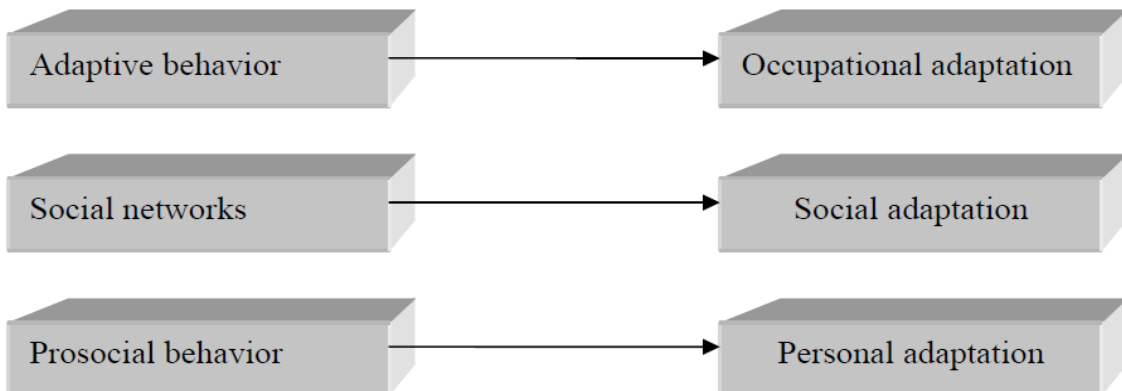


Figure 2 shows how the different types of adaptive behavior can emerge out of the research model's variables described above. Workers tend to improvise to the new conditions dictated by the emergency situation in a way that enables the

continuity of operation, this behavior is based on social based connectiveness with other colleagues as well as supported by helping behavior.

Figure 2: types of adaptation



Simply, we found that when employees consult with each other whether to go to work or not during the month long attacks, or how exactly to behave, they, in fact, developed a foundation for continuation. Employees who were afraid to come to work, will not come, and other worker, will follow their example and be absent as well. These patterns of social based behavior play a critical role in determining the organizations continuity of operation during disaster; a role that was misperceived until now to be the exclusive role of emergency managers.

Actual Performance

However, although the importance of adaptation is understood, does it actually affect organizational performance during disasters? In the next stage we examined this question and found that adaptive behavior was the best predictor for greater organizational performance during the month long crisis when contrasted with previous periods (table 1).

Table 1. Predicting performance during a disaster

Variable	Model 1	Model 2
(Constant)	1.825	1.219
Administrative framework	-0.041	-0.048*
Information flow	-0.014	-0.039
Adaptive behavior		0.054*
R ²	0.23	0.46

*p<0.05

The results show that none of the “managerial” factors which were examined, e.g., managerial decision making (“administrative framework”), or information flow, significantly explained better performance rates during the disaster. Only adaptive behavior, which is, as has already been shown to be based on social mechanisms, positively and significantly predicted better performance during the disaster.

Summary

In this article we suggest an innovative perspective of achieving business continuity. Managers’ attitude towards managing the organization during an emergency should not focus on general preparedness that would not necessarily be effective during an unusual event. Rather, the focus should be on elaborating social relations and learning from past behaviors in various emergency situations that will enable and enhance the adaptive behavior to the latest situation. Employees and managers will naturally adapt their behavior at work, as they are experienced in doing so in other settings in their lives, such as among family, community and social relations. The emergency managers’ role during disasters is to allow the best conditions for workers and managers to adapt their behavior and contribute to the ongoing efforts of stabilizing the organization condition during periods of turbulence and uncertainty. Doing so will enable the employees who deal with “daily incidents” at work to use their knowledge and experience and adapt their behavior in a way the will assure the whole organizational survival. Managers should prior to the disaster invest resources in assuring employees cooperation during crisis. Such actions will allow the organization to be able to count on its employees when they are most in need- at times of crisis and disaster.

THE STATE OF KNOWLEDGE IN
THE SOCIAL SCIENCES ABOUT
HOW TO MOTIVATE THE PUBLIC
TO PREPARE FOR DISASTERS

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Where we are today, based on the conclusions from the cumulative social science research record, is that relatively strong, conclusive, and replicated science-based evidence exists regarding what it takes to teach the public what they need to know, and how to motivate the public to take actions to prepare for possible future hazardous events and disaster. This record of scientific evidence provides a more effective basis for increasing public knowledge and motivating public preparedness than alternative popular approaches, for example, those based on good intentions, intuition, and limited personal experiences. A synthesis of what is known based on the social science research evidence accumulated to date is presented in this paper. The key question is behavioral: “how do you help people in the public to stop, listen, and get ready for future disasters that most of them think won’t really happen, and, if they do, will happen to other people and not them?” Most people think that way because they think that they are not at risk to high consequence low probability events. This perception of being safe is reinforced every day that a disaster does not occur.

Preparedness behavior motivated most by disaster experience.

Perceptions of “being safe” change to perceptions of “being at risk” immediately after a disaster. In fact, experiencing a disaster has the strongest effect among all factors to motivate people to prepare for future disasters. Research on what has been popularized as “the window of opportunity” has found that the strong effect of experiencing an actual disaster on motivating survivor preparedness declines as time from the event passes because perceptions of safety re-emerge and rise to pre-

disaster levels typically within an approximate two-year period after the event.

Two key motivators in the absence of disaster.

In the absence of an actual disaster, the social science research record identifies two other factors as the strongest motivators *by far* of household preparedness action-taking. The first is “information received from official sources” about preparedness. To be effective, information must: come from multiple sources, be communicated over multiple channels of communication, focus on what actions to take, explain how those actions cut future losses, and be consistent (say the same thing) across the different messages received. The role of consistency across different messages in motivating public preparedness was not evidenced in a recently completed major study on public preparedness, but this is not reason to exclude it from the list of important factors to consider since its importance has been documented in multiple other studies. The second factor is “unofficial information observed, heard or received”. The impact of “seeing” others prepare and mitigate is generally a stronger motivator for preparedness and mitigation action-taking than receiving information about the need to take actions.

How people convert preparedness information received into preparedness actions.

A recently completed “mega-study” of motivating public preparedness provided two major contributions to social science knowledge. First, the study was based on all the households in the U.S., and it confirmed the findings of studies previous studies that were performed on small populations in unique parts of the country. This lends great increased validity to existing conclusions. Second, it clearly identified the general social process that people go through to convert received preparedness information into actual household preparedness actions. This process can be described as follows. *Information received* and *information seen* are the two key factors that motivate the public to prepare.

Wednesday October 20 2010 Diplomatic Academy of Vienna

Addressing The Challenge: UNSCR 1325 on women, peace and security and its successor resolutions build on two pillars: the recognition of violence against women in situations of armed conflict, and the importance of the inclusion of women in conflict prevention, conflict resolution and peace building. The first pillar has received ample attention, the second pillar ...

Keynote speakers

- International keynote speaker: Lesley Abdela, Gender/post-conflict/UNSCR1325 consultant
- Ambassador Ursula Plassnik, Member of Parliament and former Foreign Minister of Austria
- Ambassador Irene Freudenschuss-Reichl, The Austrian Foreign Ministry

The conference intends to discuss the key questions:

- What are the experiences of women working in conflict situations?
- How can women's participation be assured from grassroots to national and international political level?
- How can women's leadership evolve in peace processes and reconstruction efforts?
- Speakers and participants will generate key recommendations concerning women's participation and leadership for peace and security.

Registration: Vienna Institute for International Dialogue and Cooperation, email seewald@vidc.org

These two factors have “direct” effects on increasing household preparedness and mitigation. The more people hear, read, and see, the more they do to get ready. These factors also “indirectly” affect household preparedness. They do this by increasing people’s *knowledge* and their perceived effectiveness or *efficacy* of recommended actions, and by increasing discussions (sometimes called *milling*) with others about earthquake preparedness and mitigation. These factors, knowledge, perceived effectiveness, and milling, in turn, also increase household preparedness and mitigation.

Conclusions On The Importance of Providing Information

These conclusions are very good news. In the absence of an actual disaster (which is the strongest way to get people’s attention and motivate preparedness actions), the two major determinants of household preparedness are both “pliable.” Policies and programs can be developed that increase information dissemination in ways that increase earthquake preparedness and mitigation. Moreover, the information to action-taking relationship is linear: the more information disseminated to households, the more they prepare and mitigate; the less information, the less preparedness and mitigation.

In comparison to information received and seen, most other factors do not matter much. Other factors either are not related to household preparedness and mitigation, or their effects either disappear or remain but are reduced to such small levels when the information factors just described are included and “controlled” in multivariate statistical models. These other factors include the increased probability of a future event (which is certainly useful to know about for other reasons) and demographic characteristics (which can constrain what people can afford, but have little effect on readiness motivation).

From the Practitioner's Desk

THE OLYMPIC EFFECT

*By: Victor Smart
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Properties
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On July 2nd, 2003 when Dr. Jacques Rogge President of the IOC announced “the 2010 Olympic games are awarded to the city of.....Vancouver”, I, like most people in Vancouver was swept up in a wave of patriotism and joy. Our country, our city, would be welcoming the world as the hosts of the 21st Winter Olympic Games. And at the time, I, like most people in Vancouver, really had no idea what we were in store for.

How did businesses prepare? Telecommuting for staff? Adjusting Business hours? Encourage staff to take vacation during the Olympics? Business closures? Business as usual? Extra security? How many? Where? When? For how long? Need a Consultant? Who? What qualifications? What do you want them to do? Deliveries? These are just some of the questions that needed answers in order to survive during the 17 + day period in February.

In 2003 we all thought “2010 is a long way away”. Unlike other events that we prepare for (floods, earthquakes etc.), we knew the Olympics were coming. We knew when it was going to start and when it was going to end. I predicted that some business owners/managers were going to wake up one day, look at their calendar and cry out “Holy Smokes! The Olympics are just around the corner”. I was right. Our organization received inquiries asking what plans we had made as late as January 2010.

My colleagues and I come from diverse backgrounds of public and private safety with some experience planning for large events. However, none of us had ever before planned for such a large scale event with so many variables.

As one of the largest property owners and managers in downtown Vancouver at ground zero, as we thought of it, we needed information, we needed procedures, and we needed partnerships.



We started our preliminary planning in the fall of 2008 with only a blank sheet a paper, some ideas and speculation of what the City of Vancouver's and other stakeholder's Olympic Plans were(including road closures, transit etc.). In January of 2009, we began meeting more frequently, hammering out detail after detail. Just like any business processes, we had to attach a dollar figure to it and justify the need for it. Not only did we require additional resources, human and material, we had to decide when and where those resources would be deployed and in the case of human resources, what duties they would perform. We felt we were ahead of the game so we alerted our contract security service provider to expect a final number of our requirements in the summer/fall of 2009. Much earlier than expected.

One of the “legacies” of the Olympic Experience was our partnerships. We are fortunate enough to have contacts in the emergency services and private industry prior to February 2010 and these relationships led to making contact with those who would turn out to be our “Olympic Partners” for a further detailed refinement of our plan. These relationships allowed us to directly interact with the various agencies preparing and planning for the games such as Vancouver Organizing Committee Security (VANOC), the Vancouver Integrated Security Unit, the Vancouver Police Department, the South Coast British Columbia Transit Authority (Transit Police), the Integrated National Security Enforcement Team (INSET), the City of Vancouver and the British Columbia Olympic Secretariat. Our properties were in close proximity to non-competition venues and having these contacts gave us the ability to communicate in detail about how our plans and our tenants’ plans would impact those venue activities and a mutual understanding of each stakeholder’s “issues” was clear.

When these relationships were established and meetings held, it allowed us better insight for such things as themes, participant demographics, locations, restrictions, timelines and anticipated size of any events. Thus we were able to plan well in advance for these events. Further, because of the existence of a “security zone” adjacent to one of our complexes, we collaborated on a system to allow deliveries to our tenants during “off hours.” Again this would have been a greater challenge had relationships not been bridged. We were able to provide our tenants with information from the source rather than what “people heard” scenarios.

Once these bits and pieces were hammered out, we had to start planning for the “what ifs.” What if this happened, what if that happened? As an example, due to the non-competition venues and security zones in close proximity to our properties, practically all evacuation assembly areas had to be temporarily relocated. With this came the communication to our tenants of the change in

locations. This also resulted in a certain amount of anxiety of what would happen should an emergency occur. Would there be confusion?

One of the very last things that was done was the exercising of likely events that may occur. Table top and field exercises were conducted on a variety of topics such as demonstrations, bomb threats, active shooters and general threat escalation possibilities. Although invited to do so, emergency services understandably were too far immersed in their exercises and pre-event planning to participate in our exercises and thus their actions and reactions had to be speculated.

We planned for a multitude of “worst case scenarios” and even though we hosted hundreds of thousands of people at each of our complexes each day, things were generally very calm. It could have been worse though. I’m certainly glad that all that occurred was Canada having a remarkable showing on the podium.



In summation my boss came up with an apropos slogan for the “Olympic Experience”. He said we would be working “business as unusual”, and for seventeen days and nights it was just that. However, because of two years of planning and exercising, we were well equipped and prepared for this extraordinary event.

Topical Issues

A PERSONAL EXPERIENCE – THE 2010 CHILEAN EARTHQUAKE

By: Elena Orrego

Project Coordinator UBC Ecuador Tier 1

Project Manager Think&EatGreen@School

The earthquake occurred in Chile on February 27, 2010. I was sleeping at my parent's house in Santiago. I heard a deep rumbling sound and felt the house shaking under my feet. I woke my husband with the urgent need to make sure my son was well and to be with him. This was the first big earthquake for him. The quake began at about 3.35 in the morning. The sound was very loud, my husband and I jumped out of bed to go to see our son. There were car alarms going off, objects falling all over the place, the sound of glass shattering, the movement was so strong that we felt like a boat at sea in the midst of a storm, we could barely keep our balance, and you could see waves on the ground. The entire house was moving and we couldn't walk. My husband and I held on to some columns and called out to our son. The earthquake seemed so long, minutes seemed like hours and I wondered if it was the end of the world. I didn't feel scared; I just wanted it to stop. When it does there is deep silence...the contrast is so great. We ran to see our son, he is fine. There was no electricity, it was pitch dark....

I went to my parents' room. They had decided to stay in bed. We tried to call family and friends to see if they were okay. My brother and his family live in the mountains. They were safe but many huge boulders came down right next to their house. It had been a very terrifying experience. We finally got through to my sister. She lived on the 12th floor of an old building. The destruction had been enormous, she had lost almost every material thing she owned, but they were well and that is all that mattered at that point. Material things seemed so

unimportant at the time. She and her 5 month pregnant daughter had been trapped in their apartment; part of a wall was blocking the way...

Thankfully there was a full moon, the electricity was gone but we could still see. We heard people in the street. People for the most part though were pretty calm. Chileans have lived through many earthquakes before and they talk about them often. We had been talking about our own past experiences at dinner that very night.

The power was gone, the cell phones were down and the phone lines had collapsed due to the number of people trying to call. My parent's house, an old colonial house with a patio in the centre survived the earthquake incredibly well. We were desperate for news but didn't have a battery-run radio. Some of our neighbours and my father went to their cars to listen to the news; the earthquake had hit the south of the country terribly. Many decided out of fear to spend the rest of the night in their cars. The city was in complete darkness but we could hear drivers in their cars rushing through the streets trying to reach their loved ones.

We found some candles and stayed up the rest of the night, in no mood to go back to bed. At midday the electricity was back. The internet was working and we sent a message to our son in Toronto, to the rest of our family and to our friends telling them that we were safe. We turned on the television and learned about: the great devastation in some areas of the country and of the unannounced tsunami that had swept away some coastal towns, the horrible destruction; and the despair of the thousands who had lost some family member or their homes and possessions - the earthquake had been devastating. The death toll was starting to rise. The president appeared on all the TV channels urging people to please stay at home. She believed Chile could pull

together and that people could use this opportunity to help each other to redistribute, to build community and a stronger society.

My dad and I went for a short walk, we saw people sleeping in their cars in the parks, there had been aftershocks and people were worried, especially those living in high rises. My husband and I decided to go to my sister's apartment building. The neighbourhood stores were closed. Most of the people that lived in the apartment building were in the lobby with a few of their belongings and their dogs. Cats hide during earthquakes and it might take days before they leave their hiding places; some people were crying. My sister and her daughter were in their pyjamas with their dog. My sister had to carry the dog, a very heavy Basset Hound, down the stairs for twelve floors, he would not move, as he was in a panic.

My husband, my sister and I decided to go up to her apartment to get some clothes and essentials. We climbed the long stairs in complete darkness, feeling the walls and the next steps. It smelled like natural gas, we could hear the voices of people trying to find their way up or down. When we reached my sister's apartment, part of the wall over the entrance was on the ground as was absolutely everything else, the refrigerator had turned over, all the bookshelves were on the floor, and there was nothing inside the closets all was on the floor. I could not imagine how those long minutes were felt there. It really wasn't a safe place to be; nothing of what we had learned about what to do during an earthquake would have made any sense. All the windows were broken, all was covered by a thick layer of dust, and it was the scene of a nightmare.

In Santiago, the older buildings and poorer parts were hit the hardest, as were some of the old churches and historic public buildings, but for the most part the buildings were okay. In the south of Chile and especially Concepcion one of the largest cities of the country and closer to the epicentre there is huge damage. Entire villages have been leveled

and the tsunami has been terribly destructive. There were people rioting and stealing from stores in some cities. Some were stealing food, water and diapers for their families; others were stealing plasma televisions, the situation became chaotic, people were surviving in tents, no water, and no power for days. In the disaster areas the army was called and that stopped the looting, a curfew was established at night and people found on the streets were arrested and some degree of order was established. The highways suffered a lot of damage and Santiago's International airport was closed until further notice.

In some parts of Santiago there were people who thought that food and water were going to run out because of the damage to the main highways that connect the country. Many went to the supermarkets and bought everything off the shelves such as canned food, flour, water, bread etc. There were huge line ups at each cash register and cars were lined up in the streets waiting to go into the supermarket's parking lots. The subway was not running, and there were only a few buses. There were long line ups at all gas stations.

There were many aftershocks of different intensity. From some that we could barely feel to some that felt like another earthquake. There was a great sense of alertness and exhaustion at the same time. In the first couple of days more than 200 aftershocks were registered.

We learned that this was one of the strongest earthquakes in recorded history. The earthquake intensity was between 8.6 and 8.8 on the Richter scale and lasted over 2 minutes. Experts said it was a miracle the death toll was so low (about 400 deaths) despite the magnitude of the quake.

The earthquake was felt from the fifth region in the north to the ninth in the south - the regions of Valparaiso, Metropolitan Santiago, O'Higgins, Maule, Biobío and Araucania. 80% of the population was affected; around 13 million people live in these regions.

Then the solidarity started, everywhere people were donating goods, non perishable food, clothing, blankets etc. Students started mobilizing to build houses in the most affected areas of the country; everybody was concerned for the other. People talked about their families, where they were when the earthquake occurred. All of Chile felt close together. The television organized a telethon to help raise money and they obtained three times their original goal. There were free concerts where people brought donations and money and the banks were open 24 hours to accept donations. The country was united on a mission of solidarity.

We could not leave Chile for more than a week past our original date of departure. My sister and her family moved to my parent's house and we were all together. We were quite crowded, but I would not have liked to be anywhere else. Being there and sharing this difficult experience with our loved ones also gave us strength and reaffirmed our closeness. For a few days what was really important in life was being alive, caring for those around us and a huge sense of solidarity; material things seemed secondary and it felt like everything was possible if people put their best energies together to rebuild.

WHAT'S THE XVII
INTERNATIONAL SOCIOLOGICAL
ASSOCIATION CONGRESS ALL
ABOUT?

*By: Larry Pearce
Pearces 2 Consulting Corporation*

The Congress was held in Goteborg Sweden from the July 11-17 2010. The Congress is held every four years the last one being held in Durban South Africa in 2006.

Over 4,800 delegates attend the Congress and as one may have surmised there are literally hundreds of sessions spread over the six days covering

everything from Armed Forces Conflict Resolution to Sociology of Risk and Uncertainty. Of interest to those members of CRHNet is the section devoted to the "Sociology of Disasters" – Research Committee (RC) 39. This section was co-ordinated by Professors Joe Scanlon, Carleton University and Lori Peek, Colorado State University.

This section attracted a wide variety of invited speakers (e.g., professors, military, government, business officials and graduate students) from all corners of the world. Invited from Canada, in addition to Joe Scanlon were Laurie Pearce (Psychosocial Consideration in Emergency Management) and Robin Cox (Looking Beyond Individual Preparedness: Civic Infrastructure Engagement and Disaster Resilience) both from Royal Roads University and JIBC. Both gave extremely interesting papers.

I was asked to act as a moderator/session chair for a number of presentations over the course of the week in the Sociology of Disasters Sessions which ran from Monday July 12 to Saturday July 17. In total, for the week, including two lunch speakers, there



were 51 presenters including moderators, plus nine post grad students. The complete RC 39 program and abstracts are available at: <http://www.isa-sociology.org/congress2010/>.

The next Congress is scheduled to be held in Yokohama in 2014.

Student & Graduate Papers

LEVERAGING YOUR EDUCATION – THE ROLE OF A PRACTICUM WITH PROSPECTIVE EMPLOYERS

By Rob Nadeau

NAIT Emergency Management student Rob Nadeau recently completed a practicum with Ontario Power Generation, one of the largest power generators in North America. Rob was asked to write an article about his experiences.

As a student in the Emergency Management Diploma program at NAIT, I have acquired crucial technical skills and I have also learned about soft skills. Once I had assimilated this plethora of knowledge, I was set loose on a company to complete a practicum assessment, which was, in this case, a thorough analysis of the organization's emergency management program, plans and people.

The organization chosen for my analysis was Ontario Power Generation (OPG) and the experience turned out to be the most valuable of all the courses in the diploma. OPG, with its head office located in Toronto, Ontario, produces 60-70% of Ontario's electrical power and has a comprehensive program to manage any emergency threatening its business and the product it provides to the province of Ontario.

What did I gain from this? Exposure to an organization's way of managing emergencies, people and external relations; development of additional tools I will be able to use the rest of my career; valuable practical hands-on experience; exposure to real world business operations; a completed project to go into my professional development portfolio and highlight on a resume; and, valuable business connections that could someday develop into a job opportunity.

What did OPG gain from this? A very thorough analysis of their program and plans, a professional report and presentation detailing the strengths and areas for

improvement, confirmation that their program is solid and comprehensive, and, the introduction to a potential candidate for future employment. Bonus features: I am

already employed in the emergency management field, in a different division of OPG, which allowed for a more in-depth review of the program and has enhanced my knowledge of the rest of the corporations EM processes. Final analysis: this is a win-win-win situation.

The field of Emergency Management is, like the world we live in, constantly changing and adapting to its environment. We have to keep up with the changes if we want to be effective in eliminating risks, saving people, mitigating damage and protecting the environment. A solid education and the application of this knowledge, is the foundation for the continuous learning needed to be successful in this field.



Rob in front of the Pickering Nuclear Generating Station (Ontario)

FACING DISASTERS IN TWO
VILLAGES OF COASTAL ORISSA,
INDIA: A COMPARISON OF
COPING, RESILIENCE AND
SURVIVAL

*By: Priya Gupta and Anand Inbanathan
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The state of Orissa, along the eastern coast of India, has a long coastline and faces numerous disasters. Villages along the coast face cyclones on a regular basis, particularly during the monsoon season. Alternatively, these villages also face the impact of recurring droughts. To understand their vulnerability to disasters and how they cope with such crises, two villages were studied, one that depends on fishing, and the other whose economy is based on agriculture. These diverse occupations directly affect: (a) how these villagers organize their lives; (b) their vulnerability to these cyclones; and (c) their reactions to these recurring disasters.

Vulnerability is defined as the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural disaster (Wisner et al 2003: 11). The focus of this paper is on the hazards that are present and may become disasters as a result of the inherent vulnerabilities of the people (Prowse in Makoka and Kaplan 2005; Cardona 2006). Characteristics such as class, gender, age, affect the ability of people to recover from a disaster, and these characteristics differ from people to people and group to group (Alwang et al 2001; Pritchett et al 2000; Moser and Holland, 1997).

“Disaster,” for the purposes of this paper refers not to the definition used by the government of India, or even the government of the State of Orissa, but from a residents’ perception: that exists a serious break in their ability to work and earn their livelihood. Without earnings residents can face starvation, health problems, and a reduced quality of life. This paper will examine each of the two

villages in turn to see how disasters bear on their lives.

The fishing village comprises about 700 households, with Noliyas (the caste name), who are Telugu speaking (i.e., they had migrated from the neighbouring state of Andhra Pradesh some generations ago). The men in the village depend almost entirely on coastal sea fishing. Men not involved in the actual fishing are usually engaged in the commercial aspects of fishing, i.e., selling fish. Very few men of the village work in activities that do not have something to do with fishing. Women are not directly involved in fishing, though they have a role in subsidiary activities of fishing, i.e., cleaning and selling fish on a small scale in the nearby market.

About 30 households are Sundis, and they are Oriya speaking people (this is the language of the state of Orissa). They are engaged in business activities, such as running grocery stores, and financial activities such as managing pawn shops, and loan agencies. Unlike the Sundis, the Noliyas, and fishermen in particular, live in a state of acute poverty thus making them particularly vulnerable.

Generally, fishing in the manner is a particularly risky occupation. Fishermen take their small boats, with their outboard motors, and a crew of about eight to nine fishermen, and catch fish within a few kilometres of the seashore. They need to go out fishing virtually every day, and even then do not often catch fish in sufficient quantities even to make it pay for their daily costs. They share out the proceedings by giving one part to each fisherman and two parts to the man who is both owner of the boat (and is also a fisherman).

Fishing in times of cyclones or unsettled weather is not only fraught with peril, but because fish do not come near the surface during storms they may not catch any fish. During these times they earn nothing. Since they live at a subsistence level, any break in their earnings leaves them in serious difficulty. Their poverty does not enable them to set

aside any funds for the lean times. For their immediate needs they require loans to manage their very basic expenses.

The living conditions of the fishermen reflect their poor socio-economic level as about one third live in houses of mud walls and thatched roofs. They live about 200 metres from the sea and at high tide (more so during cyclones) the water can come almost up to their homes. Others live in better quality houses that are made of brick and cement and with concrete roofs. They can withstand the forces of the cyclones and these houses are also built some distance away from the sea, and not as close as the residents who built their houses at a later date (and so could not get a better location).

Living in precarious conditions has also made them see the need to reduce risks to their lives in order to have some life security. The “super cyclone” of 1999, (actually a series of cyclones that came in quick succession), resulted in the deaths of several thousand people. Houses were rebuilt to more exacting standards of safety, i.e., brick and cement houses with government financial support. Cyclone shelters were built to give shelter to those still living in the more poorly constructed houses (thatched roof houses). More efforts were spent on the education of children, though the bias is still towards educating boys - with a hope that they would find other employment besides fishing. Insurance was purchased by fishermen so that they could provide funds for their families’ support even if they themselves lost their lives (when fishing becomes impossible the people of the village migrate, for short periods, to earn a living elsewhere).

An institution that plays an important role in the lives of the fishermen is the caste *panchayat* (council) that looks after the fishing enterprise of the village. It acts as a supporting organization whenever the people need funds in any emergency, regulates fishing, and resolves disputes both within the village and also disputes between this village

and other villages. By strengthening their resilience through such means, they have survived many disasters that have struck this area.

The residents of the agriculturally-based village are engaged in an occupation that is not as risky as that of fishing. It has two caste groups, one that is the overwhelming majority and includes 390 households of Kandayaths (name of the agricultural caste). The other group includes 10 Brahmin households - the men are temple priests, although they also own agricultural land.

Cyclones and droughts afflict them from time to time. For most of the people of this village, agriculture is a subsistence occupation, and virtually a hand-to-mouth existence. Loans are needed and taken at various stages of the agricultural calendar. They are perennially in debt, both from managing their agricultural work, and also to meet other financial needs, including health problems, weddings, school fees, and so on. When natural disasters strike this area, they are put to tremendous hardship. Other than heavy rain, cyclones also cause sea surges and occasionally fresh water surges from the river. This causes flooding and destroys their crops. If the water surge is caused by the river water, their crops may be destroyed, but they can get back to planting crops in the same place within a short time. If it is a sea surge, then their difficulties are compounded as salt and sand make the lands unfertile for an extended period. At other times, droughts cause the farmers much more harm.

When a cyclone strikes their crops will be washed and then, followed by dry weather, and their crops may again be destroyed. Though farmers are in a similar economic condition as the fishermen, they are in a marginally better situation, because the risks and troubles they face are less likely to claim their lives. There are also three rich farmers in the area, who provide financial support to the local people, and provide employment. This village does not have any caste council, though the statutory panchayat

(council) is meant to provide support and relief in times of emergencies.

The people of the agricultural village cope with the recurring disasters in several ways: (a) their houses have been built on higher ground from the sea, with better materials, and (b) nearby sand dunes protect them from the strong winds of cyclones. However, the strong bonds of solidarity that appear to be a defining mark of the fishing village, which faces more risks to their lives than farmers, is not found to the same extent among the farmers. Dependence on each other in times of difficulties, as well as in ordinary times, is required much more amongst fishermen, but is less needed among farmers (though in difficult times they too come together to provide support to those who need it).

Ultimately, we have to conclude that even at their subsistence level, and with all the difficulties of facing recurring disasters, the people of both the fishing and agricultural village have survived, and more than that, they have continued with the same means of livelihood that have been in existence for generations.

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EMERGENCY RESPONSE ASSISTANCE PLANS

By: Candace A. Sellar
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In my previous career as an Environmental Emergencies Officer, I spent a considerable amount of time surrounded by twisted and torn metal at train derailment sites with spills of hazardous materials (hazmat) from dangerous goods shipments. "An estimated 12 percent of all goods carried by rail in Canada are hazardous materials" (Conway, 2006, para. 12) and these materials travel over "73,047 kilometers [sic] of railway tracks across the country posing a significant potential environmental risk from derailments and spills" (Duncan & Nowlan, 2008, p. 264). One of the most notable spills in Canadian history was a chlorine gas release from the Mississauga, Ontario train derailment that occurred on November 10th, 1979. The Mississauga derailment was a critical event as

it focussed attention on the potential risk associated with transporting dangerous goods through our communities. Quarantelli (1981) articulated the situation quite profoundly when he stated that “a community need not contain chemical producers to have potential chemical problems” (p. 3). In order to address these rail related hazardous material problems, the Canadian Transportation of Dangerous Goods Act (TDGA) requires Emergency Response Assistance Plans (ERAPs). This paper will examine ERAPs including a description of the planning practice, historical roots, and cultural influences. In addition, this paper will outline the influence of the Mississauga derailment on the regulatory scene and examine the current state of hazmat rail emergency planning practice in Canada.

Emergency Response Assistance Plans (ERAPs)

ERAPs are important tools required by Transport Canada for addressing the preparedness and response requirements of hazmat releases caused by the derailment of trains carrying dangerous goods such as explosives, toxic gases, flammable gases, multiple hazards and poisons. “Part 7 of the Transportation of Dangerous Goods Act 1992, requires that before a person offers for transport or imports certain dangerous goods, the person must have an approved Emergency Response Assistance Plan (ERAP)” (Transport Canada, 2009b, para. 2). Dangerous good rail shipments requiring ERAPs demand expert knowledge and specialized response equipment during a spill that is typically beyond the capacity of the local responders. The requirement for an ERAP forces the responsible party to conduct a Potential Accident Assessment (PAA), which “will help identify problems that could be encountered in the transportation cycle and determine which resources will be needed to mitigate an incident” (Transport Canada, 2009a, Potential Accident Assessment section, para. 1). Consequently, an ERAP may be considered the first line of defence for local responders when arriving at the scene of a train derailment with a hazardous material release. As Denis (2001) asserted, “risk

management begins with information” (p. 209), and ERAPs serve as vital source of information in an emergency.

ERAPs contain detailed information specific to the dangerous goods hazards onboard a derailed train--information proven to be essential to those first at the scene. ERAPs provide information on plan activation (e.g. authority and key contact numbers), response capabilities, contacts of qualified experts, lists of specialized response equipment available for deployment, response actions to be taken, equipment and personnel logistical arrangements, and communication systems to be implemented. These plans are empowering sources of information to local responders and are designed to eliminate uncertainty regarding “how a dangerous goods release could occur, how these materials could react under the circumstances and what actions can be undertaken to remedy the situation” (Transport Canada, 2009a, Introduction section, para. 5). Without a doubt, the information contained in ERAPs is critical for minimizing local responder uncertainty regarding the hazmat emergency, promoting quick and effective response activities, and protecting the overall health and safety of those first at scene and in the surrounding community in which the derailment occurs.

Historical and Cultural Roots of ERAPs

Prior to the Transport Canada requirement for ERAPs, local responders operated predominantly in an information vacuum with great personal risk at the scene of a hazmat spill. This information vacuum was in large part created by the disconnect of having a federally regulated railway system with the responsibility for railway emergency response left to the local municipality. As a result, municipalities did not have the authority to directly obtain valuable shipment information from the rail operator. Consequently, the local responders were not aware of the exact nature of the dangerous goods passing through their communities and as a result had very little information regarding the

specialized responses required for complex hazmat releases. Furthermore, “there appeared to be an information void regarding what each organization was really empowered and able to do, i.e., what the community could reasonably expect from each organization in the event of a major transportation accident involving chemicals” (Quarantelli, 1981, p. 33). Local responders at the 1979 Mississauga train derailment faced all of these challenges, and as a result “the [ERAP] may be traced to the recommendations made by Justice Grange following the enquiry into the Mississauga train derailment” (Transport Canada, 2009b, para. 1). As a result of the investigation, Justice Grange acknowledged that there was a significant information gap and subsequently “recommended that any shipper of dangerous goods must have a plan to control any release of dangerous goods in the event of an accident” (Transport Canada, 2009b, para. 1). Thus the ERAPs came into existence and to this day need to be submitted and approved by the Minister of Transport and available to local responders.

The enquiry into the 1979 Mississauga train derailment was in part spurred by the media, public interest organizations, and citizen-based pressure following the massive emergency evacuation. Prior to this event, many Canadians did not perceive the railways as high-risk. However, post-event, public perception altered as “public concern about the risk of hazmat incidents [became] rather intense. This [was] primarily due to the involuntary nature of the risk and the potential for significant consequences in the case of a rail hazmat incident” (Glickman, Erkut, & Zschocke, 2007, p. 1015). Furthermore, “in every disaster, the effects on health . . . constitute the most vital and crucial uncertainty, the one that causes the most anxiety for communities” (Denis, 2001, p. 204). Therefore, when you combine involuntary risk with uncertainty about the impacts of the hazard, the end result is a very concerned and politically active community.

Hence, in the case of dangerous goods spills from train derailments, this resulted in a cultural shift away from public non-awareness and a perception of satisfactory railway safety practices, to one of increased (albeit somewhat uninformed) awareness and a perception of increased risk. This was likely exacerbated by Quarantelli’s (1981) prophetic observation that “there is also reason to suspect that actual and potential hazardous-in-transit accidents may be on the increase” (p. 8).

The Mississauga Train Derailment: A Focussing Event

A significant catalyst for reform in the transportation of dangerous goods by rail was the aforementioned derailment of Canadian Pacific freight train 54, carrying thirty-eight cars of “cargo designated as hazardous, including chlorine, liquid petroleum products, and caustic soda” (Liverman & Wilson, 1981, p. 365), at the Mavis Road crossing in Mississauga, Ontario, late in evening on November 10th, 1979. The derailment and subsequent chlorine gas release resulted in “the evacuation of a quarter of a million residents of the city of Mississauga... at that time, the largest peacetime evacuation ever conducted in North America” (Liverman & Wilson, 1981, p. 365). Nevertheless, what made the Mississauga train derailment such a significant focussing event for change was how completely the event illustrated the vulnerability created by the hazmat information void and how desperately emergency planning was required in order to adequately prepare for and respond to such emergencies. “The key questions were, what had been on the train and what was in the wreck? There was a critical need for information about what was there and information about how to deal with the problem; however, the uncertainty would last for days” (Scanlon, 1989, pp. 308). “Even when the railway confirmed chlorine was in the wreckage, the frustration continued, because those in charge had no expertise in the chemical area” (Scanlon, 1989, p. 308) and “the loading note supplied by CP was a listing for

information which nobody could read or understand” (Legadec, 1982, p. 2). Consequently, the Mississauga train derailment “was Canada’s introduction to a major threat from toxic chemicals” (Scanlon, 1989, p. 304) and from a hazmat emergency planning and response perspective it was clear to all that it was an utter failure. As a result, the Canadian Transport Commission (CTC) launched what was to become known as the Grange Enquiry and “the federal minister of transport announced he would introduce legislation on the control of transport of dangerous materials” (Legadec, 1982, p. 5). This legislation resulted in the ERAPs that we know today.

The Current State of Rail Transport of Dangerous Goods in Canada

ERAPs transformed how and what information is shared at the time of a rail hazmat spill and vastly improved the associated emergency preparedness and response functions. However, recent train derailments resulting in hazmat releases, such as the derailment which “dumped 700,000 litres of fuel oil and potentially cancer-causing wood preservative into Wabamun Lake near Edmonton” (Conway, 2006, para. 11), illustrate that many of the issues experienced at the 1979 Mississauga train derailment have re-emerged as issues today. Transportation Safety Board investigation reports detail “inadequate labelling and reporting of potentially hazardous loads; and inadequate emergency response planning, training and supervision.” (Duncan & Nowlan, 2008, p. 269). Duncan and Nowlan (2008) connected the re-emergence of these railway safety issues to an “increased resilience on industry self-reporting and voluntary compliance [as] a growing trend across Canadian enforcement agencies” (p. 267). Based upon recent derailment events and as a result of intense public criticism, Transport Canada has revised the TDGA reinforcing the need for ERAPs, adding the requirement for security incidents to be considered in the PAA for ERAPs, developing requirements for dangerous goods transportation

security clearances, and enabling “the drafting of regulations requiring that dangerous goods be *tracked during transport* [emphasis added] and that incidents involving loss or theft be reported” (“Government of Canada”, 2009). In summary, although the TDGA has been enhanced, the value and importance of an ERAP at the scene of a hazmat rail spill remains unquestioned.

Conclusion

The development and implementation of ERAPs has become a successful process for closing the information void for local responders attending train derailments involving dangerous goods. The Government of Canada has actively registered and approved ERAPs, and currently, “there are over 900 active ERAPs filed with Transport Canada” (Transport Canada, 2009b, para. 7). ERAPs will continue to be relevant as “significantly increased rail traffic is projected across Canada and the United States east to west to serve the burgeoning North American trade with Asia” (Duncan & Nowlan, 2008, p. 267). In closing, it is important to remember that “almost everyone in Canada lives within 50 kilometres of a railway of some kind” (Conway, 2006, para. 36), which indicates that we are all vulnerable to spills from dangerous goods rail shipments and beneficiaries of comprehensive Emergency Response Assistance Plans.

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INFORMATION SHARING AS A
BARRIER TO RESEARCH - A
FAILED RESEARCH PROJECT

By: Ashley Forest, Avraham Minkowitz and David Etkin
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Earlier this year, the authors (2 graduate students in the Masters of Disaster and Emergency Management program at York University and their

faculty supervisor) embarked on a small research project intended to assess how people with disabilities were taken into account within businesses continuity, contingency and emergency planning. The approach involved the confidential and anonymous interviewing businesses and organizations of all sizes regarding company/organizational policies, and how the informal culture of the organization supported such policies; it also aimed to identify the level of participation of the disabled within the creation of such plans. Unfortunately, the project had to be terminated. Two barriers resulting in the inability to retrieve information needed from companies at a level required for any sort of reasonable analysis; (1) confidentiality concerns, and (2) an apprehension about sharing planning measures (or a lack thereof).

Lack of planning may be a reason for the lack of information and the apprehension to release information. Many small and medium organizations do not have formal emergency plans, and therefore were unable to answer the survey questions and participate in the interviews. Smaller organizations seemed to consider emergency planning for disabled individuals as a reactive process – to be addressed when the need presented itself (i.e. hiring of a disabled employee). Larger organizations appeared defensive, as if they were being audited on compliance, even those with established plans as required by regulation.

The research responses also varied by size of the organization and concerns over confidentiality. In smaller organizations businesses confidentiality was less of a concern and any information available was more often than not provided. In medium sized businesses surveyed, confidentiality concerns were dependent on the type of business; a franchise, for instance, showed greater concerns about confidentiality of information than independently owned businesses. Larger organizations were generally more unable to provide the information required for a high quality study to be conducted;

this was particularly evident in large private corporations.

Concerns regarding confidentiality also varied depending on the type of organization. In this study, organizations from the private, public, and non-profit sectors were approached. Private industry was the least cooperative of the three sectors. Citing confidentiality concerns and protection of business practices, private industry appeared to view the research as largely as an unnecessary audit. Even though public sector organizations were willing to provide government approved reading materials regarding individuals with disabilities, they were relatively similar in response to private industry and preferred not to discuss this issue. The non-profit sector provided a similar response to the public sector.

Private industry and non-profit organization (dependent on size) could potentially sweep “disabilities” planning under the rug; laws to address such concerns, however, more heavily regulates the public sector. As dictated by laws such as Ontario Human Rights Code (1992), The Ontario Disabilities Act (2007), and The Accessibility for Ontarians with Disabilities Act (2005), many public sector institutions are required to have a certain level of preparedness for peoples with disabilities. Quality service standards and mandatory training ensure that individuals in the public service are informed. Despite this level of training, few really wanted to comment in depth about its effectiveness or the culture of the organization.

In all sizes of organizations there also appeared to be some reliance on the informal benevolence of staff as a coping strategy. Working within tight budgets and with limited resources, several organizations appeared to have some faith that absence of planning would be compensated for by individual initiative. It is not clear how effective this strategy is, but it is unlikely to compensate for a lack of formal planning.

Our inference is that apprehension is not necessarily rooted in a lack of planning, but rather a lack of willingness to comment on the planning that was done in both the public and private sectors. In two specific instances individuals were unable to comment on the working policy regarding individuals with disabilities because of a fear of misrepresenting policy.

The barriers faced during this research raise a larger question about the nature of research and cooperation in sensitive fields. If the organizations that employ and serve us are unwilling to subject themselves to scrutiny, even if it is confidential and anonymous, then it becomes extraordinarily difficult to evaluate organizational and social needs, and the effectiveness of policy.

This study yielded little by way of results regarding how individuals disability are taken into account in emergency plans; it did however highlight issues around the sharing of information, which in itself can be a large barrier to effective emergency management.

RESILIENCE QUEST

*By: Lilia Yumagulova
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This past summer I set out to Europe on a ‘resilience quest’ in search of the theory and practice of resilience, transformation and the ability to deal with change. I am providing a brief synopsis from three conferences that are, in my opinion, of particular interest to the readers of the CRHNet newsletter.

Resilient Cities 2010: 1st World Congress on Cities and Adaptation to Climate Change. Bonn, Germany.

Resilient Cities 2010 was jointly convened by ICLEI - Local Governments for Sustainability, the City of Bonn and the World Mayors Council on

Climate Change. Municipal leaders, climate change experts and international political leaders gathered in Bonn to launch the Mayors Adaptation Forum; the first annual platform of the World Mayors Council on Climate Change which guides local leaders in advocacy and local adaptation practices. ‘The cities have changed - and the mayors will have to change - said Mayor of Durban, South Africa,

Having met several mayors throughout the conference, I found particularly inspiring work being done in Mexico City, where Mayor Marcelo Ebrard is championing efforts to reduce disaster risk and mainstream climate change into urban development planning. As part of this effort a particular emphasis is made on training: 10,000 civil servants from decision makers to technical staff will be educated about possible ways to increase resilience of this high-risk mega city.

The launch of the Making Cities Resilient campaign—a new initiative of the United Nations International Strategy for Disaster Reduction (UNISDR) is to guide cities in disaster preparedness and resilience at the municipal level - was another highlight of the conference. The campaign is focusing on resilience at the local level and targeting over 1,000 local government leaders worldwide. The basic ingredients of urban resilience as proposed by the platform sound familiar: improve urban planning, infrastructure and building safety; reinforce drainage systems to reduce floods, storm and health threats; install early warning systems; conduct public preparedness drills; and take measures to adapt to the increasing impact of climate change. However, there are potentially much larger indirect impacts of this campaign. Beyond increasing urban disaster resilience as Margareta Wahlström, UN Assistant Secretary-General for Disaster Risk Reduction suggested, this platform can potentially lead to an “increase of space for local governments in the national arena and in global agenda-setting.”

Currently, 85 cities around the world have signed up. In Canada the District of North Vancouver is championing the campaign. More information is available at:

<http://www.unisdr.org/english/campaigns/campaign2010-2011/>

The NATO Advanced Research Workshop “Climate Change: Global Change and Local Adaptation” Hella, Iceland.

This workshop brought together 60 scientists, engineers and policy makers from 14 different nations and multiple fields, reflecting the global and inter-disciplinary nature of climate change research. Held June 6-9, 2010 in Hella, Iceland, the workshop was hosted jointly by the U.S. Army Engineer

Research and Development Center and the University of Iceland .

The workshop had five primary purposes:

1. Summarize what is known about vulnerability and impacts of climate change at local/regional scales.
2. Define the role of risk analysis in managing risks posed by climate change.
3. Define the applicability of adaptive management for climate change.
4. Identify strategies developing countries can use to manage security risks.
5. Identify specific research needs for improving the value of risk analysis as applied to climate change.



NATO workshop participants near the Eyjafjallajökull Volcano

The President of Iceland, Dr. Olafur Ragnar Grimsson, opened the workshop with a plenary speech on “Climate Change and New Security Challenges:

“The people of Iceland have witnessed the alarming melting rate of our glaciers, which have long been the largest in Europe. The pace of retreat is so

striking that some mountains and valleys which have been covered by ice for centuries are now visible for the first time.

My country can thus be described as a theatre of the climate change process. This is not only because of the glaciers but also due to our struggle with the largest desert in Europe.

Iceland can also serve as an inspiration, as an example of how to battle climate change through comprehensive transformation of the energy systems.

The personal touch in the President's speech on the effects of the global change on his nation, the location of the workshop— a remote lodge in Southern Iceland tucked at the base of the now famous Eyjafjalljökull volcano, field trips to disappearing glaciers and stories from local emergency managers and planners created a sharp understanding of the challenges of planning for climate change. Proceedings of the workshop will be published by Springer in Spring 2011. More information is available at:

<http://el.erdc.usace.army.mil/climate/>."1st IAPS conference Vulnerability, Risk and Complexity: Impacts of Global Change on Human Habitats. Leipzig, Germany.

Organised by the International Association of People-Environment Studies this bi-annual conference explored the complexity of the interrelations between the social, the built and the natural environment and the impacts of global change on them. More information about the content of the conference, including abstracts of presentations is available at:

<http://www.ufz.de/index.php?en=18450>

Of particular interest to the readers of the CRHNet newsletter might be CapHazNet, a Europe-wide organization with a similar mandate to CRHNet. It is the first primarily social-science project on natural hazards funded by the European Commission. Research conducted by this organization was shared throughout the conference, as the organization has a strong 'science to policy' transfer commitment. It is a network of scholars, stakeholders and practitioners interested in reducing the negative impacts of, and increasing the social resilience of, European societies to natural hazards. Main research topics include: social capacity

building; risk governance; social vulnerability and risk education among others.

Aside from the social dimensions of natural hazards CapHazNet focuses on the regional practices of risk prevention and management. More information is available at: <http://caphaz-net.org/>

Among the highlights was the key-note address by Mark Pelling, King's College London, UK. He introduced a resilience-transition-transformation framework, where he challenged the notion of resilience. "Resilience seeks to maintain the status quo. The aim is to use risk management to protect established interests and processes...this is the dominant mode of adaptation" – argues Pelling. How do we understand resilience and what are the policy implications of this understanding?

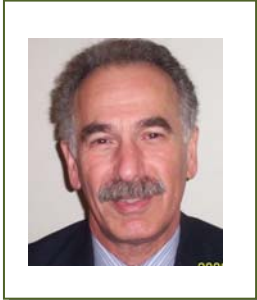
The Young Researcher's Forum was another highlight, something that the CRHNet symposium could potentially adopt. It provided a unique space for an exchange of ideas and learning between senior and junior researchers. Each young researcher was assigned two 'mentors' (Professors). Mentors, having thoroughly read the paper being presented, gave their feedback and constructive comments during the Forum.

The District of North Vancouver, BC has been designated a "campaign city" in the 2010-2011 **World Disaster Reduction Campaign** called "My City is Getting Ready". The initiative addresses issues of local governance and urban risk and features role model cities in disaster risk reduction and resiliency building. The campaign is focussing on raising political commitment to disaster risk reduction and climate change adaptation among local governments and mayors and developing tools for capacity development.

<http://www.unisdr.org/english/campaigns/campaign2010-2011/>

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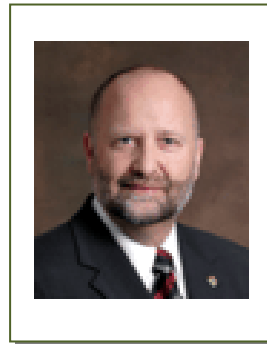


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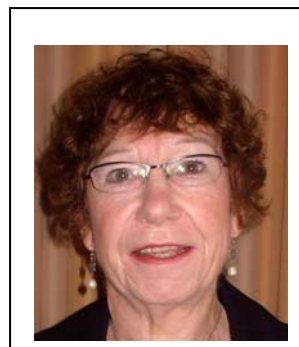
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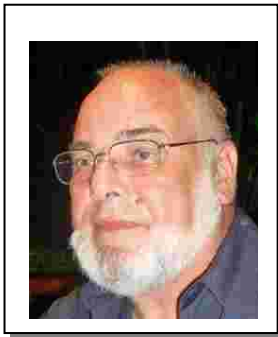


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Become a CRHNet Member

What is “CRHNet?”

Founding members of CRHNet had a vision to develop a Canadian inter-disciplinary and cross sectoral **network** of researchers, academics, practitioners and business and local community members to enhance an understanding of risk, hazards and emergency management. The mission of CRHNet is to create **a safer and more resilient nation** by identifying risk and hazards and to improve emergency and disaster management.

The Network creates an environment in which the hazards research, education and emergency management practitioner and business community can effectively **share knowledge and innovative approaches** that reduce disaster vulnerability. CRHNet can help to:

- (1) fill the information and research gaps that exist in Canada;
- (2) inform practitioners; and
- (3) reinforce the lessons of the past.

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