International perspectives on Recovery

SPECIAL EDITION
Includes articles from NZ Recovery Symposium 2004

Fresh perspectives on personal and community resilience

Real life recovery challenges

historical snapshot

Hoddle Street Massacre, Melbourne, Victoria, 1987

It was a cold Sunday night on the 9th of August 1987, when 19-year-old Julian Knight armed with two rifles and a shotgun walked out into Hoddle Street, a main thoroughfare of Melbourne, Victoria. Forty-five minutes later, six people were dead, one was dying and nineteen were wounded. Many more were fortunate to escape death or injury as he indiscriminately fired over one hundred rounds of ammunition at passing motorists and the police as they tried to apprehend him.

Events such as the Hoddle and Queen Street shootings saw the application of recovery management arrangements in support of communities affected by events other than traditionally defined natural disasters such as bushfire, flood and cyclone.

This represented a significant change in the type of event to which recovery arrangements had previously been applied. The growth in types of events where recovery arrangements are applied continues and now includes events as diverse as bushfire, flood, drought and terrorism. The common thread in all these events is not so much the cause as the impact, at both individual and community level.

Cover photo by The Canberra Times

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FOREWORD
Trans-Tasman collaboration setting the new recovery agenda

*Andrew Coghlan and Sarah Norman reflect on the increased interest
and commitment to disaster recovery in both Australia and New Zealand*

Since the events of September 11 and the Bali Bombings, many people have noted the amount of attention given to activities traditionally defined as response. At the same time there has been somewhat of a 'quiet revolution' in the recovery arena as models have evolved and been adapted to meet the ever-increasing range of risks to which communities may be exposed. This edition of the *Australian Journal of Emergency Management* highlights the interest and commitment of those working in the area of recovery. It provides a range of articles reflecting both recent and continuing developments in the areas of recovery policy, planning, management and professional development.

Two major activities, both sides of the Tasman Sea, have typified this development, renewal and strengthening of recovery arrangements. In New Zealand, a strategic framework for recovery is being developed, encompassing an holistic approach and activities to enhance New Zealand's ability to recover from disasters. In Australia, a major review of community support and recovery arrangements has been completed under the auspice of the Community Services Minister's Advisory Council's Disaster Recovery Sub-committee.

Recovery developments in New Zealand

The Ministry of Civil Defence and Emergency Management has made a commitment to recovery from emergencies under Goal 4 of the *National Civil Defence Emergency Management Strategy*. The draft document *Focus on Recovery: An Holistic Framework for Recovery* is a discussion document setting the direction and proposing a framework for recovery planning and management in New Zealand. It outlines the context and direction of future work for recovery including the identification of activities that work towards enhancing New Zealand's ability to recover from disasters. The aim is to increase the capability of organisations to undertake short, medium and long-term recovery activities, enabling a timely and effective response to the recovery of affected communities.

Symposium delegates reflect on both continuing development in recovery policy, planning and management

On 12 and 13 July 2004 approximately 300 delegates from a variety of professions, organisations, and backgrounds gathered in Napier, New Zealand to attend the New Zealand Recovery Symposium. Delegates contributed to the development of the recovery framework through discussion and debate of the multifaceted aspects of recovery outlined in the draft document *Focus on Recovery: An Holistic Framework for Recovery*. A range of international and national experts presented, including Professor James K. Mitchell (USA), Dr. Anne Eyre (UK), Professor Brenda Philips (USA), Professor John Handmer (Australia), Dr. Rob Gordon (Australia), Dr. David Johnston (NZ), and Professor Emeritus A.J.W. Taylor (NZ).

In opening the Symposium, Professor Ken Mitchell, Rutgers University, USA, provided a fascinating insight to the 1976 earthquake in the City of Tangshang in China; an event little-known to many. The earthquake claimed over 250,000 lives and the population is still recovering. This emphasised the complexity and long-term nature of the consequences to be managed as the result of disaster. In this time of discussion and consideration of 'consequence management,' it was a timely reminder of the complexity of post disaster management.

While discussions at the Symposium were energetic and opinions varied, there was clear agreement in a number of key areas. The holistic approach addressing the key components of recovery were endorsed while the naming of the components as suggested at the Symposium, being community, psychosocial, environment, infrastructure and economic, will
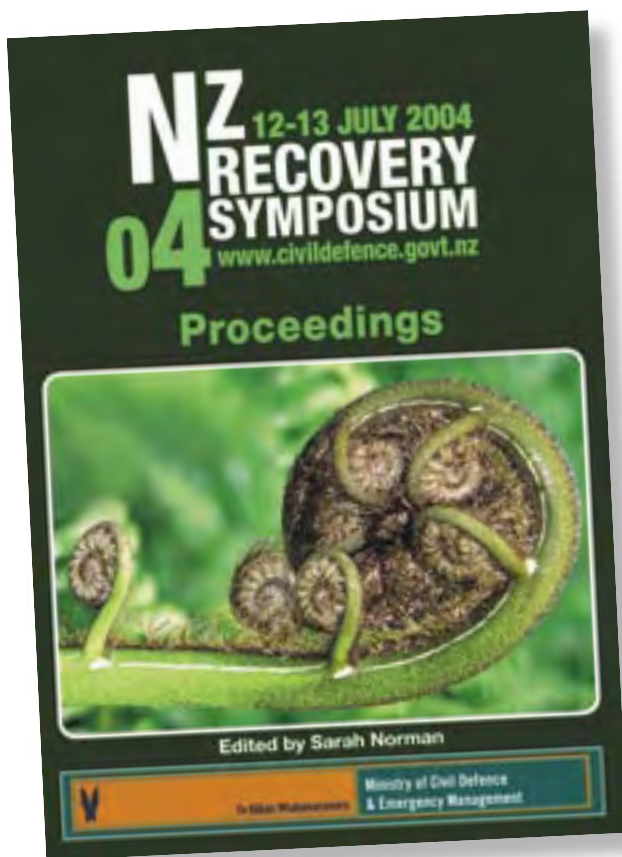
be reviewed at the end of a consultation period. Also strongly supported was the notion that individual and community well-being lie at the centre of each of the components. In this regard there was a clear recognition of the importance of people, partnerships and politics throughout the recovery process.

Following the Symposium the core areas of work on recovery include the publication of the Symposium proceedings; a review of *Focus on Recovery: An Holistic Framework for Recovery;* and a new guideline on recovery practice in New Zealand. The strategic areas for future development of recovery in New Zealand will be redefined for implementation by the combined Civil Defence Emergency Management sector.

Recovery developments in Australia

On the other side of the Tasman, those in the recovery field in Australia have been equally busy with extensive recovery programs provided as the result of a range of different events like the Bali Bombings and bushfires throughout three States/Territories at the beginning of 2003. These events have been closely followed by a number of reviews into the effectiveness of emergency management arrangements, including recovery. In addition, a full-scale review of the arrangements for the provision of community support and recovery arrangements following disasters has also been undertaken under the auspice of the Community Services Minister's Advisory Council.

The Bali tragedy in October 2002 presented a significant challenge to the existing community-based recovery arrangements in that it was an extra-jurisdictional event that took place offshore. The nature of the incident required strong central co-ordination and management of the recovery activities, a somewhat different approach from the more traditional one where events were managed at a local level and escalated upwards.

The impact of events such as the ACT and Victorian bushfires in January 2003 also led to an expansion of thinking about dimensions of recovery. Previously, much activity would have focussed on physical and social recovery, but the bushfires and other events highlighted economic and environmental impacts. Consequently, the range of organisations involved in recovery management has broadened, necessitating an integrated approach to the management of community, psychosocial, economic, environmental and infrastructure elements of recovery (similarly to the New Zealand approach).

The review considered it important that:

- the best aspects of individual State/Territory approaches to recovery be identified and developed; and
- arrangements be developed to formalise the role of agencies at the Australian Government level in recovery.

Key attributes of the most effective recovery programs include:

- development of formalised structures, including co-ordination and operational procedures to achieve an integrated, whole-of-government approach to recovery (incorporating the key components of recovery);
- agreed arrangements, such as partnerships or memoranda of understanding, to formalise service delivery arrangements;
- development of positive working relationships with other recovery agencies and broader emergency management networks (often achieved through involvement in committees and practical exercises);

A range of national and international experts presented latest developments in aspects of recovery

The New Zealand Recovery Symposium full proceedings order form can be downloaded from www.civildefence.govt.nz or obtained from sarah.norman@dia.govt.nz.

From left to right: John Norton (Director of Ministry of Civil Defence & Emergency Management) Russel Fairbrother (MP for Napier) Chris Blake (Chief Executive & Secretary for Internal Affairs, Department of Internal Affairs)

- use of recovery taskforces or leaders to promote whole-of-government approaches to recovery; and
- a commitment to recovery management principles and concepts, including long-term recovery programs with the aim of empowering individuals and communities to manage their own recovery and enhance ongoing sustainability.

In addition, the development of cross-jurisdictional networks and use of expertise for ongoing mentoring and post-event consultancy, together with the development of a recovery-based research agenda, were identified as key factors to be further developed, formalised and strengthened to promote cross-jurisdictional and national capacity.

Articles

This edition of the *Australian Journal of Emergency Management* endeavours to provide a sample of articles addressing issues from a range of perspectives of recovery. A number have been drawn from the 2004 New Zealand Recovery Symposium while others reflect on specific experiences.

The range of articles highlights the diversity of issues requiring consideration in recovery. The range of organisations involved and terminology used vary from place to place and event to event, however, it is clear that the overall aim and objective of the various aspects of recovery described are very similar. This similarity of approach and a willingness to exchange information has seen the development of strong partnerships and alliances, particularly across the Tasman. The broader insight into recovery engendered by a global approach bodes well for the continued development of recovery programmes and support mechanisms to enable sustainable recovery for communities affected by emergencies and disasters in the future.

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Developing community resilience as a foundation for effective disaster recovery

Coles and Buckle compare the resilience of communities and the engagement of local people in disaster recovery in Australia and the United Kingdom

Abstract

Our recent research into community resilience, both in Australia and the United Kingdom (UK), indicates that resilience is a multi-dimensional attribute that in its different forms contributes in various but equally important ways to disaster recovery.

We start with the premise that effective recovery can be achieved only where the affected community participates fully in the recovery process and where it has the capacity, skills and knowledge to make its participation meaningful.

Resilience addresses the second of these qualities; in fact it may be defined as the total of the individual elements, but is ineffectual without the means of engagement through participation with the wider social, economic and political communities.

Our research focuses on four particular areas:

1. The changing risk landscape where new types of risks are emerging that are not amenable to the traditional command and control management model.

2. The changing policy agenda of governments since the attacks of 9/11, in particular the UK's Resilience Agenda.

3. The engagement of local people, whether planned or not, in the recovery process.

4. The limited capacity of emergency services to deal with the protracted and multifarious demands of comprehensive recovery.

This research is derived from a variety of sources including direct experience in recovery management and the investigation of community and emergency service responses to different types of disasters. Community resilience is largely neglected in planning and in operations, though in practice community engagement in recovery, a measure of resilience, tends to happen spontaneously. In this sense resilience may be inherent or at least developed in situ after a disaster. However, resilience can also be planned for and developed before a disaster strikes. We indicate that there are a variety of capacity building methods, and especially linkages with other capacity building programmes, that can materially increase community resilience.

The emerging risk environment

Over the past decade there has been a shift away from focusing on the hazard as the element to be managed or controlled in the disaster management (DM) process to a better understanding that DM is concerned with managing risks (Salter 1997). This has been paralleled by a growing awareness of the range of risks that we now confront, or more accurately which we now see as being part of the risk environment. Governments and communities, and agencies perhaps less so, now accept that it is not just rapid onset natural hazards such as storms, fires and flooding that fall within the scope of disaster management.

A wider range of events and processes that include infrastructure disruption (power, water, transport, telecommunications), extreme weather events (heat waves, cold waves, drought), chemical-biological-radiological-nuclear (CBRN) events, public health threats (such as HIV/AIDS, TB, SARS, BSE, foot-and-mouth disease) and the various impacts of climate change/global warming are all candidates for emergency response. New types of risks include gas and power supply systems disruption and water supply contamination in Australia, disruption of Auckland's power supply in New Zealand, and the concatenated collapse of power supplies in Italy and the northeast of the USA. The heat wave of summer 2003 in Europe killed at least 30 000 people. Apart from the issue of climate change, would death by heat wave previously been considered a disaster as it clearly is now?

This emerging risk environment includes events that have been known for many years (such as heat waves and power outages) but which are only now being

Planning and preparation are the first steps toward mitigation

included in the range of hazards that elicit a response in planning and management from governments, agencies and the community. This reflects not only an increasingly complex and technologically based society and heightened understanding of risk assessment but also the driving processes of the media and of the public appreciation of risks, especially of risk to everyday life (Buckle et al 2001a).

The characteristics of these new risks are significant for disaster management. The hazards may be indiscriminate in where they occur and whom they affect (such as terrorist attacks), they may be invisible (such as disease or CBRN), they may be embedded in the structure of our society and the ways in which we go about our normal business (transport disruption, electricity outages, etc) and they may be long-term processes whose origins are difficult to identify, which run for decades and which once begun, are difficult to halt or control, such as climate change.

This suggests that DM strategies based more on long-term social, economic and environmental adaptation and drawing upon assessments of risk, vulnerability and resilience may be more appropriate strategies than the more traditional hazard control measures.

Definitions

As has been discussed by others (Marsh & Buckle 2001) the word community has a number of different meanings, many of which have validity in the context of DM and which are context sensitive. For our current purposes we take community to mean people at a local (that is sub-municipal) level who are not organised by emergency services but have skills, resources and an organisational capacity or structure that allows them to provide services to people at risk or actually affected by disasters. This includes voluntary groups such as the Red Cross, St John's Ambulance, WRVS or churches. It also includes local volunteers who participate in response and control operations but who are not full-time, are not paid and whose engagement is local, such as fire-fighting volunteers in the rural fire services in Australia.

Community therefore is local, voluntary, self-organising and may have DM as only part of its span of interests.

Given the emerging risk environment any definition of disaster that lists particular hazards is likely to be out of date. Certainly they are typically open-ended in referring to the types of events and to the scale of events (Government of Victoria 1986 and HM Government 2004) and do not exclude events that may arise or which may come to be considered as emergencies or disasters that are not now considered hazardous to the community.

The definitions given in the Emergency Management Australia (EMA) Glossary are:

> *disaster* – a serious disruption to community life which threatens or causes death or injury in that community and/or damage to property which is beyond the day-to-day capacity of the prescribed statutory authorities and which requires special mobilisation and organisation of resources other than those normally available to those authorities.
>
> *emergency* – an event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and co-ordinated response.
>
> – Any event which arises internally or from external sources which may adversely affect the safety of persons in a building or the community in general and requires immediate response by the occupants…

The definition given in the *Civil Contingencies Bill 2004* describes an emergency as:

> *'an event or situation which threatens serious damage to: human welfare in a place in the United Kingdom: the environment of a place in the United Kingdom or: the security of the United Kingdom or of a place in the United Kingdom' (p1).*

The importance of an increasing range of types of disasters is that it is unlikely that current – or even a single set – of agency-based DM arrangements will be adequate to address the range of hazards, risk, impacts and consequences that we will confront in the future.

Resilience as a concept has gained currency in the post 9/11 emergency management vocabulary, yet it is not a new concept. In 1983 Douglas and Wildavsky described resilience as:

> *'…the capacity to use change to better cope with the unknown: it is learning to bounce back …resilience stresses variability' (pp196–197).*

More recently Kendra and Wachtendorf (2003) have applied the term to the creative actions of organisations they observed in the aftermath of 9/11. They argue that such creativity is an important element of resilience being a significant feature of the emergency response and suggest that planning and training should enhance creativity at all levels of responding organisations, stating:

> *'…training and preparation remain fundamental, but creative thinking, flexibility and the ability to improvise in newly emergent situations is vital' p52).*

Similarly, Dynes (2003) agrees that the term resilience does convey a sense of emergent behaviour

> *'…which is improvised and adaptive in rapidly changing and usually ambiguous conditions' (p17).*

Conversely, he sees the command and control structure of emergency response organisations as a destroyer of flexibility and innovation rather than a necessary part of response to it as does Wildavsky (1988).

Resilience then, has been a term adopted by UK policymakers to describe ways they would like to reduce the nation's susceptibility to major incidents of all kinds by reducing their probability of occurring and their likely effects. They do this by building institutions and structures in such a way as to minimise any possible effects of disruption (Cabinet Office 2003). It has been stated that the 'resilience agenda' is seeking to do three things:

1. Build a comprehensive capability for anticipating major incidents to prevent them or take action in advance that will mitigate their effects.
2. Ensure that planning for response and recovery is geared to the risk therefore ensuring preparedness.
3. Promote a culture of resilience including business continuity thus helping to reduce the disruptive effects of disaster (ibid).

Indicators of community engagement
Policy indicators of community engagement

Dealing with Disasters (Cabinet Office 2003) makes no reference to community but refers frequently to voluntary sector agencies, which we take as a proxy for local and community engagement. Most references are to response activities but there is an explicit statement of involvement in a wider range of activities.

> *"With sudden impact emergencies (explosions, major transport accidents, riots) the initial response is normally provided by the statutory emergency services and, as necessary, by the appropriate local authorities and possibly voluntary organisations. Experience of slower onset or less localised emergencies or crises (BSE, the fuel crisis of 2000, foot-and-mouth disease) shows that other organisations may well face the brunt even in the early stages of a major emergency" (Cabinet Office 2003:6).*

The Draft Regulations accompanying the *Civil Contingencies Bill* (HM Government 2004) refer to community risk registers (but otherwise not to voluntary or community activity) and the *Standards for Civil Protection* (Home Office 1999) make a few references to voluntary sector agencies. In both cases the community (taking voluntary agencies as a proxy) are apparently seen as passive recipients of assistance and support. Similarly, the capabilities work-streams (Cabinet Office 2004) refer to a number of planning and operational tasks without referring to local people, social support or recovery.

In Australia the references are more explicit. Emergency Management Australia refers to one of its four key concepts – the Prepared Community – with the expectation that community actions will be positive and may take the lead (EMA 2004).

Planning in Australia is also directed to involve local people

The Emergency Management Manual Victoria, the principal policy and planning document for the State, refers frequently to voluntary agencies and to community groups, again with the expectation that local people will be actively involved (Government of Victoria 2001).

Recent extensive reviews by the House of Representatives into the 2003 bushfires in the Australian Capital Territory, and the Victorian bushfires by the Victorian Commissioner for Emergency Services, indicate that through local, public and transparent public consultation there is a growing commitment to engaging local people, involving them in policy and in taking their needs into account (Government of Victoria 2003).

These reviews have been paralleled in the UK by a long running series of reviews into DM arrangements spanning many years and culminating in the latest review that was trigged by floods in 2000/2001; the fuel crisis; and the outbreak and consequences of foot-and-mouth disease, resulting in the development of new arrangements for managing disasters in the United Kingdom.

All these activities suggest a strong commitment on the part of governments to understand the needs and priorities of local people for local people, in turn, to contribute to these reviews.

Planning indicators of community engagement

Policy commitment has to be translated into action if it is to have any force and the first step is through the disaster planning process.

Planning is given great weight in Australia and the UK, though it is in the former that there is a concerted and directed effort to involve local people. In both countries emergency services and local government (although only recently in the UK) are expected to contribute to risk assessment and planning.

In Australia there is an explicit effort made at all levels of government to involve local people, community groups and the volunteers. Australia's federal constitution planning for DM occurs mainly at State and Territory and lower levels. In Victoria there are representatives of the community and voluntary sectors at State, regional and local levels.

This commitment is less evident in the United Kingdom. Discussions with a number of emergency planners from the emergency services and local government indicate varied commitment to local community. While local authorities are very much involved in planning, initially only in a secondary role to the 'Blue Light' agencies in the response phase of a disaster, they do have primacy in the recovery phase. It is true to say that in some areas of England and Wales there is no political or bureaucratic will to engage local people in the voluntary sector through purposefully designed processes, while in other areas there is a strong commitment to voluntary agencies. It is important to point out that voluntary organisations, in particular St John's Ambulance and the WRVS, have historically been very involved in DM arrangements, especially in providing services for blue light agencies during disasters, manning rest centres, etc.

Interestingly, current research indicates that at the most local level, the parish, there is substantial DM planning being conducted. This is planning not for response or recovery particularly, but for mutual aid with no set events or timeframes.

In Australia there are clear statements about the composition of planning bodies (Government of Victoria 2001). The national guidelines in the UK are much less specific in setting out how, or even whether, local people should be involved.

We therefore have a situation where policy commitment is similar in both countries, but the UK's strategic commitment to local involvement through formal planning is less evident. To a degree planning for disaster operations can occur at the time, as all plans have to be fine-tuned to the context in which they are invoked. The research of Buckle, Marsh and Smale (2002) indicated that risk assessment and vulnerability identification occurs in Australia and can be effective, but is certainly frugal with resources prior to the disaster event. This is a risky approach especially when it comes to establishing management arrangements and arrangements for co-ordination, logistics and command and control as these are called into play as soon as the disaster occurs. They depend on defined and agreed roles and sources of funding, equipment and personnel, and these are almost impossible to achieve during a disaster.

Operational indicators of community engagement

The strongest indicator of community engagement occurs in the management and operational activities focused at the control of, and recovery from, a disaster.

This is the strongest test of local engagement. Policy and planning are impotent if they do not lead to practical action, while impromptu practical action can compensate for weak policy and planning (though in some circumstances it may cause confusion where it conflicts with already agreed practice).

Our work, and that of others, has shown that local people have a good understanding of the risks they face, though the priority they attach to any particular risk may not be shared with the emergency services. Local communities will often identify risks that emergency services consider irrelevant or trivial or outside the legislatively mandated boundaries of DM, despite the open-ended definitions set out in legislation (Buckle et al 2001b).

Case studies

In England initial research centred on Lewes, a town in East Sussex and the seat of the Lewes District Council, and at the village of Leonard Stanley in Gloucestershire. Lewes was badly affected by flooding in October 2000 and many homes in Leonard Stanley were affected by a windstorm in October 2002 that caused a power outage for five days.

In Lewes the local emergency management plan made virtually no reference to the community, voluntary groups or to recovery activities. However, from discussions with officers at the district council it became clear that following the floods local people were engaged in support and recovery activities. A range of groups provided home visiting and outreach programmes, local information, help with clean up, and personal support activities to the affected community.

In Leonard Stanley there was no agency or government response to the loss of power. Losing electricity was significant for many people. Those on low incomes could not afford the loss of perishable goods in freezers and fridges and people dependent on stair lifts were trapped either at the bottom or top of their homes. Some people were unable to cook or heat water and were without lighting while others made frequent visits to hospital when their electrically powered medical equipment failed.

Local emergency services were not evident initially; though later they and the local council were broadly supportive. The initial response began with local people, one family in particular assuming a leadership role, who contacted the local church. They arranged home visits and the church hall was opened as a support centre where hot meals (which were provided) could be prepared and eaten. A local community information programme advising on appropriate personal action and reporting on progress of power restoration was started and maintained (Bevan 2003).

Community leadership and mutual support was equally evident in events in Australia. Buckle (2001b) makes particular reference to bushfires in the Yarra Ranges shire on the outskirts of Melbourne, widespread floods in East Victoria in 1998, and the loss of gas to 1.8 million households across Victoria in October 1998.

Buckle (2001b) indicates the natural events showed a range of responses that were characterised by:

- local engagement;
- local, non-coercive and inclusive management activity;
- co-operative behaviour;
- innovative support programmes;
- management structures focused on local and specific issues; and
- attention to issues of lifestyle and development.

These responses addressed a range of support programmes that included:

- personal support;
- outreach programmes;
- childcare;
- financial assistance for homes and farms;
- personal hardship grants for essential household items;
- locally provided clean up and immediate aftermath subsistence programmes;
- social activities;
- memorial activities; and
- community development.

These occurred within the framework of planned arrangements but the timing, shape, range and commitment to activities was wholly the community's own.

The gas shortage management arrangements were not so well planned. After an initial delay government took a lead, relying on the DM networks established through planning and training. The gas outage was treated as a disaster of the same sort as a flood or bushfire, and the needs of affected people were treated as the same sort of need requiring similar arrangements for support.

Local people's mutual support was critical to effective management of this event that ran for almost three weeks (Buckle 2001b).

After a short time it became apparent that there were a number of especially vulnerable groups that included:

- people on gas-powered life support systems;
- people with skin disorders or psychological disorders who had to bathe numerous times a day and who required hot water;
- people in palliative care;
- the frail elderly and newborn children who needed heating and hot water; and
- healthcare facilities, nursing homes and hospitals that required gas for heating, cleaning, washing and cooking.

These people could not receive adequate care without community support at the local level. This local support came in the form of neighbourly watching and care, sharing of domestic hot water and cooking facilities, use of community facilities for cooking and bathing, voluntary restrictions of gas use, and a range of daily support services.

Local communities in England and in Australia play a vital role in supporting their members who have been affected by disasters. In England we experience the same sort of local engagement, but without the planning support. This leaves communities more vulnerable to resource inadequacies through isolation from official recovery efforts.

Why community engagement in disaster management

Rights-based disaster management

Basing the supply of aid and services to affected people on a human rights basis is a new concept for disaster management in developed nations but has widespread currency in relief, aid and development programmes in developing countries. Rights extend beyond assistance and should include planning and, where feasible, strategic management. This is a cornerstone of democracy. We can therefore extend the human rights approach from aid to planning, and from the developing world to the developed world.

Local people's mutual support is critical to emergency response

Planning as the basis for effective management

Effective management in disasters can occur without planning as the Victorian gas shortage showed, but it is fraught with risks, suffers delays in start up and is usually inefficient in use of resources. Disaster management practitioners generally accept that effective management derives from effective planning. Effective planning needs to include all stakeholders, including voluntary agencies and community representatives.

Government cannot do it alone

Governments are rarely able to meet all the needs of affected people. Our experience shows that extensive and long-term support to affected communities, families and individuals is likely to be required as the disaster unfolds. Emergency services and governments may concentrate upon control of the hazard and the protection of life and property but support in terms of welfare, recovery, reconstruction and development typically comes from local people.

Local people provide some services before, or even as a substitute for, government and emergency services support. Search and rescue, first aid, personal support, evacuation and emergency welfare centres are frequently provided locally before agencies and emergency services are able to respond.

Government resources are limited

The resources of government, emergency services and local government are limited, even for major disasters. There is a simple, practical need to rely on the knowledge, skills, capacities and resources of local people to meet initial needs as well as their needs weeks, months or years after the event when the attention of government has been directed to other priorities.

Local engagement will inevitably occur

Local people will be involved whatever the planned arrangements. All our research shows that local people will assist each other. Planning just makes this commitment proceed more efficiently. Not recognising the inevitability of local action, and not planning for it, is denying demonstrable social behaviour.

Principles of Community Capability

There is a set of principles that govern effective and sustainable community engagement in disaster management. These principles were developed following research conducted in Australia and the UK (Buckle et al 2004).

Good governance

This addresses the extent to which programmes and the policies they reflect conform to contemporary standards and include:

Inclusive processes	Local policy development and programme implementation need to be fully inclusive across many social dimensions including gender, ethnicity, religion, age, occupation and wealth as exclusive programmes often fail.
Legal authority	Clear legal authority to act reduces uncertainty and minimises ambiguity, therefore supporting the development of effective DM plans and practice.
Accountability	Accountability is necessary to ensure that even at the local level, compliance with explicit statutes and codes occurs and that local people have the capacity to monitor and critically assess performance.
Agreed and defined priorities	Competing interests severely limit the effectiveness of capacity building and DM processes. One means of minimising competition is to ensure that agencies, governments and groups agree on clearly stated priorities.

Adequate resourcing

Financial adequacy and continuity	Financial support needs to be adequate to meet programme requirements.
Staff	Staff numbers need to be adequate for the process of programme development, start up, implementation, review and closure.
Skills	The skills of staff, local people and agencies need to be adequate to the project. Enthusiasm, an indispensable ingredient, is no substitute for skill.
Knowledge	Knowledge of local circumstances (local risks, history, tradition and culture) is an essential ingredient for effective programmes.

Integrated development

The linkages between environmental processes, social and economic are generally accepted, if not fully understood.

Social	Links between people, groups and communities whether on a personal, formal or regulated basis.
Economic/livelihoods	Human activities that focus on livelihoods, wealth generation and wealth distribution.
Environmental	Relationship between human activities and the natural world.
Cultural	Values and beliefs of individuals and groups, including faith systems, diet, dress, behaviour, inter-personal and person-to-government relations.

Self-sustaining

Programmes and activities and the changes they achieve in the world need to be self-sustaining and to contain a capacity to adapt to, and optimise, relations with external systems.

Adaptive capacity	Programmes and entities need to have the ability to respond positively to changes in the environment.
Over the horizon scanning	Planning needs to look to the future so that plans remain relevant to a changing environment.
Continuous assessment	Any programme or situation requires continuous monitoring and critical evaluation to ensure that it is still achieving agreed outcomes.

Change mechanisms

The capacity to respond to change (related to adaptive capacity) is a prerequisite of any situation or system that wants to avoid becoming rigid and inflexible.

Exit strategies	Not all situations are avoidable or recoverable and there may be situations and circumstances when the optimum strategy is withdrawal.
Consultation	Consultation is a requirement for all elements and all stages of resilience development.
Information exchange, feedback and reporting	For matters significant to the community – or to a part of the community – more formalised exchanges are required (though they may not be formal in tone or manner).

Effectiveness

Any programme needs to be effective in meeting its goals and efficient in minimising the costs of attaining the specified outcomes.

Effective	The resilience-building programme must achieve its aims.
Efficient	The capacity building programme must use the minimum resources necessary to achieve its outcomes.
Cost-effective	Costs should be proportionate to benefits and this proportion agreed on prior to the programme beginning.
Multi-lateral	Multi-lateral benefits should be maximised, as should sharing of resources, information and skills.

Severe storms are natural, destructive and rapid onset events

New risks require new responses

Numerous authors (Buckle 2003; Quarantelli 2001; Rubin 1998; Rubin 2000) have written on the new risks we face. The risks described may differ very significantly from risks we have been exposed to in the past. The arrangements we have for dealing with disasters have been designed around natural, destructive, rapid onset events and they may not be well suited to events that are non-natural, involve systemic failure or accident rather than destruction, which are irreversible and slow onset (so making it difficult to recognise the threat until it has occurred and is escalating beyond control).

These risks tax government and agency resources more than traditional disasters and are likely to be more widespread in their impacts and long lasting in their effects.

Governments need to engage the community whose knowledge and capacity are essential components of any response. This has been recognised at a policy level but less so in the UK in planning, training, education and awareness.

Beyond this we see that there is an urgent requirement for DM to learn from the practice and experience of the humanitarian and development sectors. It appears to us initially that other broad policy and governance frameworks have applicability to disaster management. These include Agenda 21, the Universal Declaration of Human Rights and the United Nations Millennium Development Goals. All these provide a standard against which we can assess resilience and disaster management.

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R

The social system as site of disaster impact and resource for recovery

Rob Gordon reflects on community and clinical observations of people in various emergencies

Abstract

Emergencies create widespread social disruption, which easily translates into degraded quality of life and undermines the social fabric of the affected community. A clearer understanding of these social processes may assist in conceptualising important dimensions of the impact of disaster and point the way to developing strategies to manage the social environment during recovery. This paper reflects on community and clinical observations of people in various emergencies and offers an analysis of some effects of emergencies on social fabric and suggests recovery strategies.

Introduction

Emergencies, even those directly affecting only part of a community, initiate a series of functions activating the whole community to their consequences (Gordon 1991, 2004). In the effort to survive impact, those involved become highly aroused, focusing on immediate needs, regardless of pre-existing relationships. Mind and body enter an unprecedented state of heightened psychological and neurological arousal (if experienced before, it is often a liability rather than a help—unless they have training).

High arousal in emergencies

High arousal activates instinctive survival programming to focus on the threat, and liberates increased physical and psychological resources for the functions demanded by survival (Bremner 2002). Intensified focus and the consequent narrowing of attention occurs at the expense of awareness of self and the social world; awareness of what has been lost is obliterated and replaced with intense impressions that dominate experience. The focus on immediate problems is so intense that people undergo radical reorganisation for survival that excludes past or future.

When a survivor of a massacre in a large building heard shots in the next room, he moved into a state without past or future; nothing else existed in his life except the present moment, the gunman and decisions that would determine if he and those he was responsible for lived or died. For many months afterwards, he lost any sense of meaning or value in the rest of his life, plans, ambitions and relationships. Whenever an incident reactivated flashbacks of the trauma, he detached from his current life and its activities.

Social debonding

This process of social disconnection or 'debonding' (Gordon 1991, 2004) accompanies a profound disruption of the pre-existing continuity of physical, emotional and social life (Gordon & Wraith 1993). Since being debonded is unfamiliar, most people do not recognise or understand it; it affects what is normally constant, taken for granted and not consciously experienced (Kauffman 2002).

Debonding is complex, varied or incomplete depending on the circumstances and individuals involved. Its pervasiveness, completeness and duration vary and disruption of the life continuity occurs on several dimensions.

A **quantitative dimension** refers to extent of the debonding:

- *Intensity* – how profound and violating the threat is, related to the subjective sense of imminent death, injury or helplessness;
- *Pervasiveness* – how totally the person was immersed in the situation; in natural disasters the whole world seems engulfed compared to a limited (though possibly more dangerous) criminal threat;
- *Duration* – how long the threat persisted, identifying when safety and security were re-established.

A **qualitative dimension** denotes which dimensions of the person's life debonded:

- Loved ones – whom the victim expects to leave at death, those given up for dead or whose fate is unknown;

Social debonding ruptures and degrades the fabric of social and personal life

- *Other people* – relatives, friends or community members from whom they are separated by the events;
- *One's own life* – when death was accepted as inevitable it is expressed later as loss of motivation or enjoyment for normal activities;
- *Career,* occupation, house, neighbourhood, possessions may no longer seem important;
- *Future ambitions,* goals and purposes may be terminated by the disaster;
- *The body* is expected to be lost in death, and may lead to bodily disconnection (psychosomatic symptoms), lack of interest in sensations (food, warmth, sexuality, etc), numbness, dissociation, out-of-body experiences;
- *Self or personality* – preparation for death means losing one's self, causing identity problems and survival guilt, or it is changed by the disaster.

Emergencies have complex consequences for body, mind and social system. These are all dimensions of recovery. Debonding affects the continuity of social relationships. Threat and arousal change bodily expression and personality, which is not always realised by victims or their supporters since the changes are often in the taken-for-granted basis for normal interactions. The effect is to rupture or degrade the fabric of social and personal life, which normally support each other (Harré 1993). Some examples may clarify debonding.

During a bushfire, occupants of a caravan park locked themselves in the ablutions block. As the fire raged around the building, the people sat in silence except for a few quietly weeping. The young woman describing this, only thought of how to cover her year-old baby with a blanket and place him beneath her so he might survive when the building burned. It did not burn and after leaving she never saw the others again. They had gone through it as individuals.

The man in the next room to the massacre above prepared himself to tackle the gunman when he entered, expecting to die in the attempt. However, the assailant was overpowered. He then helped evacuate the wounded, all the time wondering where the gunman was. No one told him he had been apprehended. He awaited further shots as he helped victims and continued to feel at risk, so he went home many kilometres away and locked himself in, feeling afraid. Safety was only re-established many hours later when he was told the gunman was in custody. He developed post-traumatic stress and more than a year later his reactions indicated he lived in a perpetual state of waiting for the gunman to come into wherever he was. The high arousal state had not been terminated and continued to underpin his daily experience. He had frequent episodes in which he felt his life was meaningless and death was the only answer.

A visitor to New York on September 11 staying near the Stock Exchange rang his wife in Australia when the second plane impacted. He said he was going to leave the area. She begged him to stay in his room.

They argued until he broke off the conversation when the tower collapsed. As he left the room he thought 'I may not make it out of this'. He walked north and saw people everywhere walking without talking. Lack of social interaction made it surreal. In Australia, his pregnant wife listened to the news rocking back and forth stroking her stomach saying to their unborn child 'we may have to do this alone baby'. Both debonded, resulting in considerable stresses for their relationship.

In drought, gradually increasing privations mean community members withdraw onto their farms with a survival mentality abandoning previous activities that brought them into communication with others. They live more solitary lives. Debonding develops slowly as conditions become more threatening and chronic stress in families reduces emotional communication. Bonding is degraded rather than lost.

Rebound—social fusion

Debonding varies with different emergencies but is the beginning of a social process. After the threat subsides, people come together forming a new survival-oriented social system where the abnormal high arousal state becomes the basis for a highly energised 'fusion' (Gordon 1991, 2004). The previous social system is redefined by the event; roles are improvised and defined by immediate tasks (Drabek 1986). In interpersonal contact, there is little time to communicate what people have been through and they interact without

counteracting all dimensions of debonding. They undertake response tasks with a stereotypic togetherness that does not provide opportunities for people to identify what has happened to them.

The narrow focus of high arousal gives a sense of commonality from the disaster, and all participants gain collective significance for each other and for the larger society that witnesses the disaster. Their actions take on communal significance, as they become the subject of media and community attention. Membership of the collective is enhanced by involvement with others in evacuation, registration and receiving aid; personal experiences tend to be put aside or cannot be evaluated.

It is common for people to say they are not affected compared to others who have greater loss although they too suffered.

A farmer from a flooded community introduced himself at a meeting as unaffected and only attending to support the community. He had not lost his house or woolshed, like his neighbours, but later revealed he lost his five kilometre access road, bridge, vehicle and entire livestock.

A young woman who survived the Bali explosion did not consider herself badly affected because her friend had suffered severe injuries. However, she suffered substantial burns and developed post-traumatic stress which she minimised for some time.

Photo by The Canberra Times

It is common for people to say they are not affected when comparing their situation with others who have suffered

Evaluating one's own needs in reference to others' has been observed since the earliest research into disasters when 'reference group' theory was developed to explain judgements that are made by comparing one's situation with others'. The notion of 'relative deprivation' described how people devalue their own losses if they are less than those of their neighbours' (Merton 1968; Schmitt 1972).

The constant intensive social examination of experiences that is part of the fusion community is disorienting to many.

> *A woman who lost her brother in Bali dreamed she wheeled him into the local football ground, which was filled with people. It expressed her sense of being the object of intense communal attention.*

> *A woman who survived a massacre felt she had no right to be distressed nor access counselling, since her friends had been killed or wounded, because it would take resources away from those more affected. Yet she suffered post-traumatic stress for some years and was highly distressed. She accessed private counselling two years later when she felt she inadvertently caused another tragedy.*

Community members who do not suffer loss are also emotionally affected through guilt. It is common for them to avoid those who suffered loss or damage.

> *Survivors of a bushfire were disappointed by friends who refused to see them because they found it too upsetting to see the damage; but the victims needed their friends' support.*
> *A woman whose house was not affected by a flood that inundated most other houses wept openly at a community meeting for what others had lost and said she avoided driving through the town because she became so upset. Those who lost everything comforted her.*

As time passes, differences emerge within the fused group. Issues come to light or people's behaviour changes so others do not understand them. Preoccupation with the general impact of the disaster tends to obscure personal circumstances that are all-important in their responses. Many have had different experiences and effects, not only through losses but other circumstances. Less affected community members readily pass judgement on how others are progressing.

> *A farmer, who was seen as not coping during a drought, had just recovered from a battle with cancer involving years of trips for treatment to a distant regional city. Drought devastated his farm just when he felt his problems were subsiding. Community members were unaware of this, but had critical opinions about his behaviour related to the drought.*

> *A few months after a bushfire, people wrote newsletter articles detailing how they put it behind them and resumed their lives. They were older people with a good financial basis and few other demands on their lives. They implied those unable to do this were lacking in determination. Yet many unable to rebuild were immersed in managing disrupted lives with young children, financial stress and emotional crisis.*

> *A woman risked her life to flee a building where people were held hostage. She raised the alarm and the police successfully resolved the situation. Later, she heard rumours circulating in her community that she fled to save herself and should be sued for negligence. Two years later she developed chronic back pain from a group of muscles in chronic spasm. Asked to think of this part of her back in relation to the siege, she said without hesitation, it was where she expected to feel the bullet lodge as she fled, since the gunman threatened to shoot anyone who tried to leave.*

Social cleavage planes

Fusion promotes a false sense of unity and eventually gives way to 'cleavage planes' as differences with collective significance emerge evoking judgements and emotions in the tight social environment (Gordon 1991, 2004). Personal relationships are stressed and disrupted especially by comparisons to what is happening for others. Anyone feels entitled to judge others based on (false) assumptions that they had a common experience.

The unique characteristic of disasters is that they damage the community fabric. It may be because everyone is involved or because the events are so traumatic for those involved, that everyone is affected by the changed threat in their lives. However, debonding is difficult to understand. Those experiencing it lack any comparison, judge it by non-traumatic experiences or compare their inability to return to normal with others who can. This undermines the social fabric of the community, which is the most important recovery resource (Kaniasty & Norris 1999).

Social fabric

Social fabric needs to be understood to develop a technique for its recovery. Disasters emphasise that communities function as wholes or systems in which the elements affect each other in a manner too complex to be mapped by simple linear relationships (Dyke & Dyke 2002). The social system is a system of communication. The material content of the social world is communication and the communal bonds that express the systemic wholeness are bonds of communication (Luhmann 1995). Hence debonding is loss of communicative bonds through disruption of communicational continuity.

Social rebonding during recovery is assisted by rituals and community memorial activities

- Communication may be lost by disrupting the medium, such as between the New York traveller and his wife;
- The essential content may not be communicated, as is common in the fused community;
- Incompatible communications that consolidate debonding may damage it, as it did for the woman who fled the siege;
- The loss of a common frame of reference disrupts communication, like the post-bushfire community when some recovered and judged those who had not.

Communication involves enacting the content of messages in a social context as well as reception and interpretation of information. Enactment of social values, customs, attitudes and meanings through communication is an essential part of their maintenance, and involving people in the communication process incorporates them into it and allows them to influence it (Giddens 1984). The ideas forming the frame of reference for social life are held in common among the community members. They are ideas no individual can change, but are understood by their constant expression and enactment in the exchanges of daily life. Examples include fairness, morality, misfortune, tragedy, victim, deserving, needing and coping. Customs and traditions reflecting past events and current issues give members common ground in spite of different opinions on them.

Social representations

Such ideas are 'social representations' (Farr & Mocovici 1984, Lorenzi-Cioldi and Clemence 2003). They represent the common elements of collective life for members of a society so they can take their place within it as individuals, express themselves and undertake actions. Social representations are conventions that organise thinking and are prescriptive by limiting the sort of ideas that can be had (Moscovici 1984).

Thought, understanding and emotions are not purely individual processes, but are organised and framed by social structures and social representations. When disasters confront people with unprecedented situations, the system of social representations based on normal life provides an inadequate frame of reference to analyse, interpret, evaluate and act upon their experiences. In the absence of more appropriate representations, this is all they have and it misinterprets the phenomena. Affected people struggle to find a social context to evaluate their reactions when they cannot compare their responses with others similarly affected.

This explains why many people affected by tragedies wish to meet others involved. They often do this informally, but it is not always successful and if they are trying to establish a system of social representations with a relevant reference group, it has to cater for the differences in quality and intensity of involvement. Individual and family counselling, while they are important, cannot adequately support affected people, who need to integrate their experience in a new frame of reference formed in communication with others with relevant experience (in the same or similar events). Yet provision for such processes in recovery may conflict with other social processes.

After a public murder, it took many weeks for police to interview the many witnesses. During this time, they would not release names or allow recovery agencies to organise gatherings. They were concerned witnesses would contaminate each other's testimonies, undermine the prosecution case and jeopardise the trial. Many affected people who wanted to meet and compare their experiences were forced to remain isolated and nearly organised their own meeting until other recovery arrangements were made.

Assistance measures derived from normal business and political priorities can divide communities if they validate one group's needs against another or suggest only a certain level of loss is significant and less is insignificant. Criteria for distributing appeal funds may be based on common sense and normal life, but to victims they imply judgements and evaluations of them and their needs. Recovery interventions evoke an implicit set of non-disaster social representations that fracture reference groups and imply evaluations from those intending to help.

Photo by The Canberra Times

These problems express failure of communication because reference systems of social representations fail to give appropriate meaning to disaster experiences nor mesh with normal expectations. The social fabric fails to resolve debonding, reactivates it in new ways or creates social cleavages separating conflicting groups.

The social fabric consists of social representations being enacted providing the frame of reference to allow interpretation and evaluation of disaster experience. It links people into communities of common experience that allow them to feel supported and able to access social resources for recovery.

Size of the problem

Although there is plenty of evidence of these problems, the size is not clear. The proportion of communities that develop clinically significant disorders after a disaster is similar to the normal incidence of disorders, 10–20% including serious depression and post-traumatic stress disorder among those highly exposed (McFarlane & Girolamo 1996; Carlson 1997; Galea et al 2002), although deliberate violence has greater impact than natural or technological disasters (North 2002). Bombings and high casualty events produce up to 45% psychiatric disorder (North et al 1999). Continuing high arousal, numbing and avoidance are important early prognostic signs, suggesting for these people, debonding is not terminated by supportive social contact.

It is not known how many suffer sub-clinical problems, normal crises and degraded quality of life. Although most eventually recover, it does not mean there are not lasting destructive changes in their personal, family, occupational and social lives that could be helped. Prioritising social interventions may prevent some mental health problems, alleviate sub-clinical problems and assist community systems to support their members' recovery.

Social fabric recovery strategies

A number of recovery strategies help constitute a social system oriented towards the reconstruction of the fabric of social life. They involve reorienting emergency management and recovery strategies to prioritise social fabric including communication, information and interaction opportunities. They also involve creating communication systems and information to form normative assumptions that define, interpret and evaluate the disaster experience.

Rebonding
Overcome debonding by establishing communication with people to link them with important others and the recovery system as soon as possible. Discourage people from withdrawing and losing touch with the affected community.

Community formation
Convene the community of interest as soon as possible by defining who is affected and ensuring they are aware of each other (collectively, not personally) and form shared representations of their predicament and needs.

Facilitate social bonds through communication
Establish communication systems that unify the affected community and carry information to log the recovery process and establish reasonable expectations and assumptions for it.

Normalise communication about the disaster and its effects
As early as possible ensure anecdotes are told that encourage people to communicate about their experiences to each other and the recovery system.

Form disaster-related social representations
Encourage communication about experiences in settings that carry information about normal reactions so expectations and assumptions are adapted at the earliest opportunity.

Form a common reality
Provide facts and information about the event, its causes, consequences and the current situation to limit uncertainty and correct misunderstandings.

Form a frame of reference
Establish a body of information to form the basis for making informed evaluations about the event and their responses.

Preserve differences and complexity
Combat homogenising tendencies of the fusion at

Photo by The Canberra Times

People affected by tragedies wish to meet others involved to establish a reference group to aid recovery

the earliest opportunity by ensuring expression of differences and effects in a climate of mutual respect and acknowledgement.

Preserve boundaries and identities

Communication only occurs across a gap or boundary and recognition of differences and privacy become the context in which relevant matter can be communicated while personal privacy is preserved.

Facilitate reference groups

Promote opportunities for people to form informal and formal groups with similar issues. Integrate them into the recovery system as its constituents by facilitating and resourcing them.

Facilitate social representations of post-disaster life

Promote community-based cultural events to represent the disaster and its consequences including rituals, symbols and artistic forms.

Integrate services

Relate the introduction of services and assistance measures so they support social representations of the disaster. Ensure they incorporate the understanding and consolidation of the social fabric.

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Psychosocial aspects of recovery: practical implications for disaster managers

Anne Eyre discusses the psychosocial dimensions of disaster and considers behavioural research in planning strategies for recovery

Abstract

This paper discusses the psychosocial dimensions of disaster and the importance of considering the findings of behavioural research in planning recovery strategies and programmes. Disaster experience highlights the importance of acknowledging the capacities and resilience of people in disasters, as well as planning for and providing appropriate mental health interventions after traumatic events. The recent development of a rights-based approach in the United Kingdom (UK) is referred to as part of a political approach to recovery. An holistic approach requires planning for recovery in all phases and includes acknowledging the role that processes such as investigations and inquiries play in aiding or inhibiting recovery.

Introduction

This paper examines various psychosocial aspects of recovery following disasters from the perspective of a sociologist and trauma specialist. My interest in major incidents and their management stems from UK experiences in a series of manmade events in the 1980s. This subsequently became known as the 'Decade of Disasters'. This paper considers the practical lessons learned about disaster recovery from three perspectives—those of academic researchers, practitioners and survivors.

Over the last 25 years much has been written about disaster stress and, more recently, ways of maximising people's coping strategies and resilience in disaster recovery. Sometimes it seems that the human dimensions of disasters and their management appear subordinated or marginalised in relation to the physical infrastructural elements of disasters. It is important to emphasise as a guiding principle in disaster management *that disasters are about people and that responding to disasters – pre, during and post impact – is about managing and supporting people.*

I have viewed disaster plans and participated in disaster exercises where the people element was missed out, either through ignorance or the fact that the significant issues to be tested go beyond the remit and timescale of an exercise. Dealing with psychosocial recovery includes those areas of decision-making and action that go beyond immediate 'blue light' emergency interventions. They embrace what are often regarded as intangible, difficult to measure qualities of disaster, including stress reactions, bereavement and trauma. It is just as important to address these aspects of recovery even though psychosocial recovery may take longer to effect. Experience suggests that the extent to which individuals and/or communities are able to recover impacts their capacity to cope in subsequent crisis events.

Psychosocial responses to disaster

How are people affected by disasters in terms of their psychosocial impacts? Clearly the likely range of reactions to any disaster is extensive and depends on the nature of the event, the communities and the individual characteristics of the people involved. At the same time behavioural research into the reactions of people involved in various disasters over time and place has identified some common responses. These are useful to review when considering recovery strategies, since a good understanding of impacts and the needs of people should underpin support strategies within disaster-stricken environments.

A psychosocial approach to disasters includes viewing them as traumatic events involving actual or threatened death or injury of people on a large scale. Trauma specialists emphasise that the traumatic effects of such events are associated in part with their being experienced as abnormal or extraordinary events. Anyone witnessing or confronting such events is likely to be affected by the experience.

When thinking in these terms, many people's first thoughts might be of phenomena such as Post-Traumatic Stress Disorder and images of the disaster victim as hapless and helpless in the impact phase. They also think of the stereotypical images presented in disaster movies of widespread panic, looting, rioting or other

forms of anti-social behaviour. These are inappropriate stereotypes far removed from the common reality at disaster sites. Apart from the fact that post-traumatic stress reactions do not manifest straight away, research suggests that widespread panic, looting and rioting behaviour are rare. Experience shows that in most disaster situations primary victims become actively involved in assisting with rescue and the first stages of recovery. Challenging such stereotypes is important in terms of recognising this first and fundamental resource in the initial impact phase of disaster.

Observing the behaviour and hearing the testimony of survivors from incidents illustrates this. An example I often use is the reactions of those involved in the aftermath of the Aberfan Disaster that took place in a small mining village in South Wales in 1966. One morning a waste tip from the local colliery suddenly slid down the mountain and engulfed the village junior school and several houses. It killed 144 people including 116 children who had just finished morning assembly and were settling into their classrooms.

Photos taken at the scene showed an outpouring of community activism in the initial stages with efforts focusing on the search and rescue of victims. An ordered collective response emerged with people forming bucket chains and working as teams to clear the slurry and help pass out survivors. The Aberfan response was not unique and gives us important insights into how people

Landslides affect infrastructure and recovery processes for emergency workers and survivors

react and behave in disasters. The first responders within this community did not panic but became engaged in focused, socially productive activities. In order to start thinking about recovery it is important to observe and understand these behavioural aspects of disaster, namely people's initial reactions and factors influencing these in the short and longer term.

Using volunteers in community recovery

Other recent events have reinforced the fact that disasters often generate an outpouring of volunteering, altruism and helping behaviour. Sometimes the offer of disaster support by volunteers can be overwhelming, presenting a real challenge to those managing disaster response and recovery programmes. Within two and a half weeks of the attacks on September 11, the American Red Cross received approximately 22 000 offers of assistance and had processed over 15 000 volunteers (Lowe & Fothergill 2004). In thinking about the initial stages of disaster recovery we should prepare for supporting those volunteers who are likely to emerge in the aftermath.

A study of this spontaneous volunteer behaviour examined the influence and motivation after 9/11 and the impact of the volunteers' presence on the community. Findings suggested that many who volunteered were motivated by an altruistic desire to help and felt a real need to transform their own feelings as victims into empowerment, thereby creating a hopeful outcome from the disastrous consequences of the terrorist attacks. Their voluntary spirit was put to good use in actives such as translating for families, delivering and moving supplies, removing debris, preparing food and fundraising. The researchers concluded that emergency planners and managers would do well to recognise this human tendency and the benefits that it can accrue.

Contributions to the response efforts enhanced community recovery and the healing of those indirectly affected by disaster. Lowe and Fothergill (2004) state,

> 'it is clear that a balance needs to be found between the emotional needs of community residents who want to volunteer and the needs of official response agencies that may be hindered and overwhelmed by too many volunteers. In the spirit of finding that balance, …we suggest that disaster response agencies make a commitment during the disaster planning stages to serve all members of a community who feel victimised by a disaster. Second, we suggest that an effective way to serve those directly affected is to design emergency response plans in anticipation of the "need to do something". A plan could include established on-and-off-the-scene work that allows those with and without skills to be of service to the community and thereby heal themselves' p309–10.

Recovery strategies for ripple effects

What other lessons have we learned about the psychosocial impact of disasters on people and the implications for recovery strategies? One fundamental point to bear in mind is that 'no one involved in a disaster is untouched by it' (Myers 1994:1). No immunity is afforded emergency responders or other disaster managers on account of the number of previous experiences of attending routine emergencies, or participating in training and disaster rehearsals. Those with disaster experience relate the difference between exercises and attending the real thing. A typical example was an emergency services responder to the Ladbroke Grove train crash outside London in 1999 that resulted in 31 deaths, who said,

> *"Nothing prepared me for the horror…In training you are shown photos of other major incidents so you are prepared in that way, but nothing prepared me for it when I saw it in real life."*

Although no one involved in a disaster is untouched by it, we do know that stress reactions are normal following exposure to a traumatic event. Evidence also suggests that most people directly exposed to disaster will not experience Post-Traumatic Stress Disorder; rather most recover naturally and without the need for long-term professional treatment. Experience has also shown that several risk factors influence the nature and severity of stress reactions, not just the nature of one's experience in an incident and the degree of proximity or exposure. These facts need consideration when thinking about developing recovery strategies and planning post-event interventions.

Recovery planners should take account of the ripple effects of disaster on different victim groups in relation to various risk factors over time and consider their recovery plans and support strategies accordingly. As we learn more about the range of impacts and types of disaster experience, so it is possible to identify potential vulnerable groups as part of recovery planning. Taylor (1989) discussed such issues in Auckland at the World Congress of Mental Health. He identified six categories of disaster victim according to the stressors they react to and the type and forms of interventions that might be appropriate for them. These included direct or primary victims (family/friends), responders and more peripheral victims including 'those far removed from the disaster face' (Taylor 1990:296). In terms of recovery strategies he referred to the need for health professionals to consider 'the range of intervention programmes they offer and the situations in which they offer them' (ibid:298).

Recognising resilience

In recent years there has been ongoing research and learning about the nature of traumatic stress as well as the extensive effects of disasters. These have been linked to debates about the appropriateness of mental health interventions as part of disaster recovery initiatives. Within the field of traumatic stress studies, there has been an interesting shift away from focusing on vulnerability towards recognising and enhancing individuals' and organisations' coping strategies and resilience in all phases of disaster. Some of the revised models of Critical Incident Stress Management reflect this shift (Crisis Management International, for example, is one provider that recently launched a new *Resiliency Approach to Early Crisis Intervention*, see www.cmiatl.com).

Organisations like the American Psychological Association suggest that those working with first responders should focus on the promotion of resilience rather than the prevention of untoward mental health problems following exposure to disasters. They cite several reasons for this including the fact that the large majority of first responders do heroically well. Leskin et al (2004) state 'Police, fire, emergency medical services and other rescue personnel are typically robust in the face of stress' (p1). Furthermore 'the emergency services usually have built-in support systems that help members cope with a variety of occupational hazards and severe stressors' (ibid).

Susy Sanders, Director of the Snohomish Country Disaster Mental Health Network describes resilience as 'the ability to adapt to difficult, challenging, stressful or traumatic life experiences' (Sanders 2004). Discussing strategies for building resilience within communities, she highlights how resilient activities focus on 'strengths that can be developed which contribute to the ability of an individual to "bounce back" after a crisis event' (Sanders 2003:3). She also suggests that good resilience training and preparedness encourages communities to return to some kind of previous state of normality and helps them to 'bounce forward' to a new normal and to grow stronger through the disruptions. This idea of drawing on the opportunities presented by crises fits with the Ministry of Civil Defence and Emergency Management's vision for recovery in terms of New Zealanders discussing disasters 'as an opportunity to adapt their community and economy to better fit the future' (ibid:6).

In keeping with an holistic approach to disaster management and recovery, the American Psychological Association gives practical examples of how to promote such resilience before disaster as well as during and after critical events. In terms of the pre-disaster phase they reinforce the idea that a resilient organisation is one that has prepared well for disaster and applied resilient attitudes and behaviours to promote well-being among

Responders engage in focused, socially productive activities

its members. This includes monitoring stress and rest breaks. The extent to which an organisational culture addresses and manages everyday stress may give some insight into levels of resilience and coping in disasters.

Promoting resilience before and after disaster

In a series of articles describing the work she has done in developing her local disaster mental health network, Sanders (2003) highlights initiatives taken to promote resilience as the basis for recovery within her community. She focused on the development of a mission statement and various activities that brought together disaster mental health professionals for the purpose of mutual education, support and the establishment of protocols during crisis events. By building community supports and connections in this way, she suggests that the well-being of the community and its members is promoted and foundations are laid for recovery from future crisis events before disaster strikes.

The American Psychological Association also stresses the importance of developing good social foundations for recovery within disaster-prone communities. Responders are strengthened through the promotion of group cohesion and interagency co-operation pre-crisis. Existing co-operation between departments, cohesion, and a good team spirit all act as 'protective buffers' (Leskin et al 2004:1). Preparing for recovery here is also about encouraging disaster professionals to develop and maintain effective interpersonal relationships within their communities, neighbourhoods, and professional associations. 'A supportive professional network can cushion impact of stress' (ibid) and thus provides the basis for successful recovery. In practical terms good disaster planning is about building social support networks, an activity that clearly extends beyond emergency planning per se, reinforcing general community development and support initiatives.

Good recovery planning also includes planning for post-disaster support services. The level and quality of environmental support following a disaster has been found to be one of most significant factors influencing vulnerability to longer term post-disaster stress reactions (see Boudreaux et al 2002). As better understanding of traumatic stress has grown, proactive psychological support services have become more accepted as part of the organised response to victims of disaster.

Emphasis has been placed on the provision of psychological debriefing for those involved in disasters as part of recovery planning and response. Over the last 10 years there has been controversy about psychological debriefing and whether providing it may do more harm than good. Recovery planners might be tempted to withdraw any such form of intervention on this basis, but this is not recommended practice. In response to the controversy the British Psychological Society (2002) reviewed debriefing and made a series of recommendations for those working in the field of traumatic stress. Among their conclusions and recommendations they highlight the importance of providing forms of early intervention and support following disasters or other crises:

> *"The essential components of successful early interventions include planning, education, training and support for those affected. Whilst in any group of people exposed to a traumatic event some may go on to develop clinically significant disorders, this should never be regarded as the normal outcome. The goal of all early interventions should be to maximise the likelihood of a positive mental health outcome using the person's own coping mechanisms and support structures" (ibid:74).*

Reinforcing this approach, organisations such as the Association of Traumatic Stress Specialists play an important role in providing and promoting accreditation standards so that appropriately trained and qualified responders are recruited and deployed on crisis response teams (see http://www.atss-hq.com/).

A rights-based approach

Recent initiatives in the UK emphasise a rights-based approach to meeting the needs of those bereaved by disaster. These rights are emphasised in various reports and guidelines written in the wake of recent disaster experiences (Clarke 2001; ACPO 2003). The rights of the bereaved include the rights to view the deceased should they wish and to access information about procedures such as body recovery, identification and post-mortems. The emphasis is also on the right to an informed choice about matters such as whether and how personal property is returned.

A key development in terms of response and recovery has been the consolidation of the role of police family liaison officers. Although their primary role is that of investigator, they nevertheless function as a liaison point between families and the host of other agencies involved in disaster response. In responding to the needs of British families affected by events such as the terrorist attacks on September 11 and in Bali, these officers made an invaluable contribution to the nature, level and quality of environmental support following disasters.

Recovery as a political process

My final thoughts focus on recovering from disaster in the longer term, particularly after manmade events. I have been much impressed by the work of Judith Herman who writes about the politics of trauma and makes this comment on recovery:

> "Recovery requires remembrance and mourning…. Restoring a sense of social community requires a public forum where victims can speak their truth and their suffering can be formally acknowledged" (Herman 1997:242).

Mindful of events such as the 9/11 commission and other post-disaster inquiries, it is important to stress that disaster recovery is about more than acknowledging suffering and giving survivors an opportunity to tell their story. It is also about putting in place legal and political processes such as investigations and inquiries to address objectively, openly and honestly the causes of manmade events and the accountability of all involved. When this does not happen – when there is cover-up and evasion – survivors' recovery is interrupted, as is the opportunity for all of us to improve our disaster management by learning lessons and acting on them.

After the Aberfan disaster representatives of the National Coal Board lied at the Tribunal of Inquiry about knowing the hazards caused by the frequent slipping of the coal tips and the vulnerability of the community living in its shadows. Countless warnings and written complaints about tip slides had been ignored. Like many others, this disaster was waiting to happen. It was predictable and preventable, indeed predicted.

As Herman (1997) suggests, recovery requires a sense of social community in which people feel supported in looking back and looking forward. This is what an holistic approach to disaster management is all about. It is only when this kind of support exists that survivors from disasters are really able to talk about recovery.

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She is also on the executive committee of Disaster Action, a charity which provides advice and support to those directly affected by disasters as well as those organising immediate and longer-term support services. Disaster Action's recent activities have included facilitating, in association with other agencies, the establishment of family support groups for UK survivors and the bereaved from the September 11 and Bali tragedies.

Educational needs for disaster management

Les Moseley presents an holistic approach to emergency management professional development and training needs

Abstract

This paper examines the need for an holistic approach to the professional development and training needs of personnel working in, and studying, disaster management. It is essential that any programme of study and/or professional development should include equipping practitioners with the skills and abilities to solve social, technical and economic problems in disaster situations around the world. It should also ensure that an holistic approach is adopted so that rehabilitation, long-term recovery, mitigation and pre-planning topics are properly covered. The paper deals globally with issues relating to disasters caused by human error and intervention, as well as the effects of natural phenomena. It concludes with a summary of the approach used by Coventry University and partner institutions in the development of its undergraduate disaster management programmes of study.

Introduction

The high profile of disaster management in recent years through the series of emergencies and disasters triggered by human error, terrorism, conflict, technological failure and natural phenomenon is of no surprise

As this paper is being produced we are once again faced with an enormous tragedy in Madrid, requiring an unprecedented response from the emergency and public services.

Much attention has centred on the direct causes and when necessary who was at fault in these disasters (Wells C 1999). What is being scrutinised even more closely is the intervention strategies and management of the response phase and the ensuing rehabilitation period following a disaster. The conflicting demands and complexity of the range of issues that are placed on relief operations make it apparent that it is no longer satisfactory to recruit disaster managers with single discipline backgrounds. Indeed, considering emergency management as relating only to relief activities generates a blinkered view of disasters/emergencies that is counter-

productive to staff development and to recognising the importance of risk reduction and preparedness planning.

To reach the status of profession, disaster management requires professionals who are properly equipped to consider in depth the range of technical, human and logistical problems before, during and after disaster strikes. Disasters do not occur in a vacuum but are part of an ongoing process. Indeed the very word disaster is something of a misnomer as it describes only the aftermath of an event that, by definition, cannot be properly controlled and is beyond the scope of the community to cope. To avoid confusion emergency management within this paper encompasses all the periods before and after an event.

It is crucial to the success of preparedness planning and relief operations that preparedness planners and emergency managers are recognised as key players and therefore properly positioned within organisations and institutions and not marginalised. This can be achieved through recognition of emergency management as a profession and not just as an add-on management function. One way to achieve this is through well-structured training and academic study of the subject.

Specialists will always be needed to provide specific advice in the preparedness phase and professional interventions in the relief and rehabilitation phases. Indeed many will argue that an efficient and effective team is best made up from a multi-disciplinary group. This underscores the argument that emergency managers and disaster management teams must take an holistic approach to the subject.

The scope of knowledge needed

Not only do emergency managers need to be cognisant of the phases of disaster – mitigation, preparedness, response, rehabilitation and rebuilding (UNDMTP 1992) – but also the range and complexity of the type, nature and scope of emergency situations that they may face within their area of responsibility.

So what are the risks and challenges that today's emergency managers face? The range and complexity of technological and natural hazards continues to grow at an alarming rate (Noji E 1997). Also, the effects of conflict and the worldwide problem of poverty (Blaikie

et al 1994) create conditions that both complicate and exacerbate planning and the response requirements needed to cope.

Sociologists argue that the two major trends of industrialisation and urbanisation (Quarantelli 1999) have had a major impact on the increase in disasters in both qualitative and quantitative terms. Today emergency managers are faced with issues relating to industrial pollution, both on and offshore, highlighted by incidents such as the Seveso, Exxon Valdiz and the pollution of the Rhine. Toxic, explosive and pollutant materials are moved around the planet in all forms of transportation. These often threaten societies remote from the source manufacturer, whose tenuous responsibility and lower safety standards create hazardous situations that are difficult to predict. This type of incident is typified by the release of radiation in one nation threatening or physically damaging another, such as at Chernobyl (Shleien 1984). The immediate and long-term consequences of such incidents need to be taken into account. Considerable knowledge is required of the types of potential hazards and the effects of uncontained releases into the atmosphere, watercourses, the sea, and onto land.

Predicting and managing pollution incidents involves the use of mathematical and scientific calculations to estimate and forecast the possible or actual effects of different types of pollutants. Modern computing techniques, intelligent systems incorporating spatial databases and geographical information systems can assist emergency managers with these tasks. Many of these systems need specialists to prepare and present reliable information but the availability and capability of these modern tools is essential. Local response arrangements vary from nation to nation but many of these industrial threats are of international concern and are therefore studied and considered worldwide. Emergency managers need this information and must be aware of information sources and their accessibility.

The after-effects of natural phenomena such as flooding, earthquakes, volcanoes, hurricanes and tsunamis attract world media attention particularly when they occur in societies with sophisticated communications or where massive destruction occurs. An example of this is the aftermath of Hurricane George in the Dominican Republic (McEntire 1998). Emergency managers need to understand not only the likely effects of such events but also why they should create a disaster in one nation but a manageable emergency in another. The issues of urbanisation, poverty, politics and lack of infrastructure need equal attention when determining how effective preplanning can be, what co-ordination can be expected, the degree of international assistance and the integration of humanitarian assistance with development.

In addition to the many areas within the response phase to specific natural hazard events, managers should also be cognisant of underlying issues that commonly affect developing countries. These include inadequate disaster preparation, the scarcity and distortion by the media and other interested parties of disaster related information, the difficulty of assessing the acute rather than the chronic needs of the victims, assessing the exaggeration of the relief requirements, the insufficiency of aid and often unjust (and corrupt) distribution of disaster assistance, the distrust in emergency managers and the challenge of avoiding dependency.

Urbanisation in developing nations has caused widespread concern in the way it exacerbates hazard events that affect major conurbations. This feature of modern living also provides fertile ground for the activities of terrorist groups who, in recent times, have caused death, destruction and widespread disruption in major cities all over the world. Combating terrorism is generally the work of the national and international security services, however preparing for its worst effects requires emergency managers to have a detailed knowledge of the types of devices and their possible uses.

Preparedness and emergency planning for all forms of hazards requires a detailed knowledge of risk assessment and the emergency planning process and is not, as many believe, just the process of allocating human and material resources through the use of various checklists. Planning the emergency response to specific sites, for specific topics, such as media management or producing generic plans to cover a range of contingencies needs to be considered as part of an ongoing process and not as an end in itself.

Postgraduate and masters programmes are available to prepare emergency management workers

Field skills for students involve working in arduous conditions and real-life situations

The aftermath of disaster, and the social and psychological impacts it causes, is not often seen as the domain of the emergency manager. However, the aftermath of disaster is indeed within the purview of the emergency manager as the impact of the mitigation, preparatory and response activities in which they are involved will have a direct effect on this period. Emergency managers must be aware of the needs of various communities within their area of responsibility and be prepared to communicate with them to gain an appreciation of needs before, during and after an emergency has occurred.

Educating emergency managers

I make no distinction between the educational needs of emergency managers in industrialised nations or in developing countries. Nor do I make a distinction between natural and manmade disasters. As many eminent writers have already pointed out, all disasters are primarily the result of human actions (Quarantelli 1999). What I do maintain is that successful emergency managers need to take an holistic view of emergencies and disasters. Specialists in mitigation, preparedness, response, rehabilitation, rebuilding and development cannot work successfully in a vacuum. They must be aware of the work of others and their capabilities. Emergency management professionals must be properly educated and trained for their tasks. They may work in many different commercial, government or non-government organisations (NGOs) in all parts of the world, but their central aim should be to carry out their role in a professional manner.

There are many methods to prepare workers in this area including short courses for subject professionals, postgraduate qualifications and masters programmes. The method employed is determined by the level of operation required and previous knowledge and skills that the individual brings to their work. Until recently this has been mainly familiarisation or skills training in emergency/disaster skill.

The Coventry University experience— the pedagogic approach

In the early 1990s, academic staff from the School of the Built Environment at Coventry University spent time working with the Registered Engineers for Disaster Relief (RedR) in refugee camps in Kurdistan. Staff drawn from a wide range of professional backgrounds conducted the relief operations, but few had a broad and knowledgeable perspective of the many complex technical and human issues that are inherent in the relief situation. In many cases, these workers, although technically competent, were personally ill equipped to survive the difficult situations they found themselves in and were often a drain on the limited resources available.

Out of this was born a number of undergraduate degree programmes specifically designed to address such issues. The clear aim of the Coventry University courses was to enable graduates to develop knowledge and understanding of the broad and multi-faceted issues that relate to the management of disasters and to gain technological and personal skills to equip them to work as field operatives and field managers wherever disaster occurs.

The courses were designed to encompass elements of engineering or technology with international studies, development and health studies, disaster management, and field skills. This broad curriculum brings together experts from a spectrum of disciplines to provide teaching staff for the programmes.

To facilitate this holistic approach the course content was developed around a number of themes, each seen as essential areas of knowledge, understanding and skill development. The inter-relation of these themes ensures a wide-ranging knowledge of the subject area and of relevant technical, personal and managerial skills.

International studies within a developing-world context was viewed as another major theme as many of the graduates seek work internationally. Graduates with long-term career aspirations as managers meant the development of management knowledge, ability and skills is deemed essential. All of these are set in the framework of Disaster Studies.

Employment opportunities for graduates are quite diverse and such employment, by its very nature, may occur in arduous conditions. In these conditions technical competence may not be sufficient to ensure personal survival and it is essential that graduates develop a range of skills to equip them for effective operation in the field. Thus 'field skills' were introduced as a major theme into courses.

Each year, undergraduate students study the practical elements of personal survival in all types of climatic conditions. Following formal study throughout the year,

many of these skills are honed during attendance on a one-week course at a field skills centre in a remote area. Each course is held in the winter months and students gain first-hand experience of working in arduous conditions. They not only develop individual survival and field skills but also learn to work together in teams to tackle a range of demanding tasks, ranging from search and rescue activities to the establishment of a refugee camp and the application of engineering principles in, for example, the construction of a temporary bridge.

A key feature of recent research has been the recognition of the concept of vulnerability reduction (Blaikie et al 1994). As courses have evolved, this area of study has been integrated into the curriculum. Within this context students study the management of disasters from the elementary concepts of the phases and types of disasters to more advanced ideas of the use of spatial information on Geographical Information Systems for vulnerability assessment, and computer-based systems for command and control of incidents. Students also study theory and practices of command and control so those who find themselves deployed to disaster scenarios where they are involved in managing the activities of a wide group of volunteers, official and NGO humanitarian aid organisations are properly equipped. Combining these with field skills means graduates have the ability to respond to and manage difficult and demanding situations.

A critical element of any undergraduate programme of study is how to provide experience for these prospective managers without exposing them to disaster situations prematurely. Courses offer inexperienced students an opportunity to undertake a year of professional training in work that directly relates to the aims of the course. In the Coventry University courses, this year takes place after the second academic year.

There are many examples of educational innovations within the courses. There is explicit focus on the development and formal assessment of skills at all levels throughout the course. This ensures the development of knowledge and understanding to a level appropriate to the learning objectives. Practical skills assessment is a particular feature of the field skills modules and can be found in other modules where the ability to do, rather than just know about, is considered essential to student development.

The pedagogic approach has been to expose students to a broad range of teaching and learning methods; much wider than in other courses. Students have to adapt to the diversity of methods that span the spectrum of the disciplines encountered within the course. Lectures, tutorials, seminars, computer-aided learning and assessment, laboratory classes, practical work, presentations, group and team work, outdoor physical

activities and a mixture of well-defined and open-ended exercises are all examples of the diversity and richness of the approach to teaching and learning. In this new and developing discipline area students are encouraged to explore a wide variety of information sources, in particular reference and case study material that is becoming increasingly available on the Internet.

Conclusion

The courses described in this paper have been developed to meet a niche market and combine appropriate areas of engineering, disaster management, development and health with other disciplines, some not previously defined as areas of undergraduate study. This has led to the definition and development of a new and emerging discipline of emergency management established within an undergraduate degree programme.

Acknowledgement

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Using online tools to foster holistic, participatory recovery: an educational approach

Brenda Phillips describes emergency management education in a virtual environment

Abstract

The purpose of this paper is to share instructional ideas for teaching a 15 week disaster recovery graduate seminar over the Internet. This paper outlines orientation strategies, key components, student resources, and a final seminar project. A concluding section addresses concerns about distance education modes of delivery. The author offers these ideas in the hope they will inspire others to teach participatory disaster recovery.

Introduction

For the past three years, *Disaster Recovery* has been taught to students in the United States (US) and, through online delivery, those living in other countries. The majority of students in past seminars reported a high level of satisfaction with seminar content, peers, instruction and their online experience. Student evaluations suggest that several factors account for their satisfaction: they can take classes from anywhere in the world at convenient hours; they enjoy interacting with other students; and they learn information they consider useful. This paper describes the general features of the online seminar, strategies for getting started on conceptual and theoretical elements of the class, ways to secure student commitment, components of the overall approach to recovery, educational resources, and the final student project.

General features of the seminar

Other than being offered via distance technology, this seminar mirrors traditional masters level work. Students read extensively in academic and practical materials, participate in synchronous (live, virtual) class sessions, and produce both individual and group projects. In past seminars, students surpassed expectations.

To deliver this seminar, the university provides a software platform called Blackboard (www.blackboard.com), one of the most commonly-used higher education distance tools in the United States. Blackboard allows the instructor to design a website where students log in to find course documents (syllabus, handouts), assignments, quizzes and examinations, an asynchronous (not live) discussion board, email, and two types of synchronous (live or virtual) chat rooms where study groups can meet online. Professors can grade assignments online, conduct surveys, and offer tests. If the instructor designs close-ended surveys or tests, the computer scores and records the marks automatically. Students can view their grades, download materials, and create their own home pages. Several features help the professor manage the seminar, including systems for handling and marking assignments, tracking student participation, and linking students to external websites.

Getting started

Students arrive to the seminar with varying levels of online experience. Thus, I devote the first week to activities ranging from logging into the website to joining a first live chat. During the first week, students come to an online orientation, post a self-introduction to the discussion board, and read an online assignment. In subsequent weeks there are additional readings and supplemental course materials with links to electronic journals and databases, online materials, and documents posted inside the course. Several faculty and practitioner colleagues have generously donated writings in electronic format and the library posts journal articles (in PDF) to a secure location after obtaining copyright permission.

Live class and discussion board (DB) posting assignments continue weekly through most of the 15-week seminar—a method that provides routine and simultaneously demands accountability. There are extra marks for quality and participation while the DB posts are scaled from 1–3. Students report that live classes are crucial for understanding concepts and facilitating interaction; they do not like the asynchronous DB posts as much, especially if they are new to online learning.

The general objectives of the seminar are to:

- describe perspectives useful in guiding recovery;
- identify the components of an holistic recovery;
- find funding sources for recovery;
- understand the research on recovery;
- demonstrate an ability to understand how community context influences recovery; and
- write a recovery plan.

To provide a consistent structure, weekly assignments are tied to specific learning objectives. Each assignment includes readings, general questions to help the student prepare for the live class and specific questions for the DB. Assignments are grouped into manageable segments of concepts and theories, components of an holistic recovery, resources, and recovery planning.

Conceptual and theoretical elements

While *Holistic Disaster Recovery* (HDR), is the primary text and is available free at www.colorado.edu/hazards/holistic_recovery, the seminar is supplemented with readings and guests. The three key concepts from HDR: holistic, participatory involvement and sustainability are relied on. The HDR text defines sustainability as the ability of a community to maintain itself over time. Holistic approaches consider how communities define quality of life as tied to social, economic and environmental spheres. Participatory strategies involve the public through workshops, seminars, elections and more.

Various definitions of recovery are explored, from both academic and practitioner perspectives. For example, students interview local emergency managers about recovery. Resulting DB posts reflect considerable differences in definitions and understandings among practitioners. Subsequent and intense student debates emanate from whether recovery implicitly means 'restore to the same as before' or requires sustainable hazards mitigation.

For class purposes, the term recovery is split into short-term (e.g., utilities) and long-term (e.g., rebuilding) recovery activities. Students define recovery as a social process that embraces mitigation, reduces physical and social vulnerability, and fosters comprehensive sustainability–a daunting challenge that permeates every discussion from replacing downed utility power lines to funding recovery projects.

A last key concept for the seminar is context defined as the time, place and circumstances in which a particular community experiences recovery. Throughout the seminar, students post to the DB contextual descriptions of their own communities including census data, housing overviews, matters of historical and cultural preservation, environmental issues, economic and business concerns, infrastructure and lifeline descriptions, and hazards history.

Theory provides interpretive frameworks and offers fresh ways to understand or approach seminar topics. US organisations that accredit universities expect theory as a standard part of masters level study. Emergency management theory is still emerging, largely borrowed from other disciplines. The theoretical perspectives that work well within the present framework include systems theory, political economy, and vulnerability approaches.

Systems theory includes the earth's physical systems, human systems, and the constructed system (Mileti 1999:107). As used in this seminar, systems theory sensitises students to reasons why society faces disasters: an *'increase in the size and complexity of the various systems'* coupled with poor fit between systems. Students learn they can influence some systems by incorporating structural and non-structural mitigation projects, addressing human vulnerability, and living in closer harmony with the physical environment.

Political economy or conflict perspectives analyse recovery problems as brought about by government and economic interests (Tierney et al 2001). Thus, damages result not from the physical impact of a disaster but rather from 'the politics of land development…the short-term profit orientation of real estate entrepreneurs' and a lack of local government code enforcement and/or land-use planning (ibid:20).

The ecological vulnerability perspective targets the inequitable distribution of resources. This perspective identifies those most likely to need long-term recovery aid as those that experience 'differential access to political power' due to social and economic discrimination (ibid:21). A vulnerability approach 'can also be used to reveal the capabilities of particular social groups in the face of hazards' (Enarson et al 2003:14).

Student buy-in to the concepts and theories

These concepts and theories are new to students. As they are abstract, time is scheduled to review terms and definitions and to provide and solicit examples. Without doubt, the students' favourite learning experience comes from debate and role-playing. The most effective (and most fun) class comes from a city council scenario where students take on roles from governmental, private citizen and business sectors. Careful casting, and knowing students' personalities, makes for a lively scenario. Working online, students enter the virtual classroom in their role and walk through a typical council agenda. A large-scale developer submits their request, followed by irate citizens. Council members call on the local emergency manager and discover the proposed development includes a floodplain. Such information compels students to research public involvement strategies which are provided in early chapters of *HDR*.

The Blackboard platform allows the instructor to send private messages in order to guide the process, eject a participant, or send groups off to confer in private. Students often decide to take on additional roles or solicit expert advice at this point including: public housing director, local environmentalists, parks director, community activist, chamber of commerce director, storm-water and drainage city employee, federal floodplain official, environmental protection agency employee, sociologist, etc.

The exercise brings attention to the full cadre of interests involved in risk reduction at the community level and how to present an issue in a politicised context when social, environmental and economic interests are at stake. The educational experience develops more fully if the professor assigns students to perspectives or roles they had not previously considered and need to research in order to present effectively.

Central components of the course

Once the foundation is laid, the seminar moves on to the basic parts of an holistic recovery (going beyond those in HDR). One to two weeks is spent on each component (below) and topics are supplemented with both academic and practical readings, case studies and guest speakers.

TOPIC	READING AND ASSIGNMENT (see References for full citation)
Economic	HDR, Chapter 5 Webb et al, *Business Recovery* article FEMA's Business Recovery checklists at http://www.fema.gov/ofm/bc.shtm Online guest: Dr Gary Webb
Social	HDR, Chapter 6 Online guests: Dr Brenda Phillips, Dr Elaine Enarson
Environmental	HDR, Chapter 7 www.epa.gov/greenkit/sitedex.htm Browse www.fema.gov/regions//v/env/env_off.shtm Come to class prepared to share what's happening in your FEMA region with environmental programmes: www.fema.gov/ep/contacts.shtm www.fema.gov/ehp/nepa.shtm Read through the National Environmental Policy Act, its relationship to FEMA Read through these brief success stories: www.fema.gov/ehp/ss.shtm Online guest: Rod Emmer, author of Chapter 7
Historic Preservation	www.fema.gov/ehp/hplinks.shtm www.heritagepreservation.org/PROGRAMS/TFC.HTM www.fema.gov/ehp/milton.shtm
Housing	Comerio, *Disaster Hits Home* Phillips, *Cultural Diversity* Enarson, *Women and Housing* Online guest: Mary Comerio
Infrastructure	Chapters 5 and 6 in *Practical Lessons from the Loma Prieta Earthquake*
Debris Removal	IS 632 Introduction to Debris Operations in FEMA's Public Assistance Program, free at http://training.fema.gov/EMIWeb/IS/ Online guest: US Army Corps of Engineers
Donations Management	Neal articles listed in Bibliography Online guest: Dr David Neal

Resources

Students may feel overwhelmed by the magnitude of long-term recovery efforts. To address their concerns a third seminar section examines case studies as well as financial and organisational resources. In the US, the Federal Emergency Management Agency (FEMA) offers a practical workbook with case studies titled *Planning for Post-Disaster Recovery and Reconstruction* (Schwab et al, 1998). This FEMA book includes sample policies, a planner's toolkit, guides to disaster operations, descriptions of the planning process, detailed case studies, and more. Guest speakers (including chapter authors and book editors) and scholarly journal articles enhance the learning experience.

To fund recovery, students work in groups to develop a resource list of grants, funding programmes, and organisational resources. Most students expect to work in the US context and they take independent study courses freely available from FEMA (http://training.fema.gov/EMIWeb/IS/). The first is IS-630 *Introduction to the Public Assistance Process*. Students also participate in an extra credit game based on IS-288, *The Role of Voluntary Agencies in Emergency Management* and the *Long Range Recovery Committee Manual* published by the National Voluntary Organizations Active in Disaster, available free at www.nvoad.org/articles.htm

Studies report that online courses are more time consuming than traditional formats

Final class project

To pull all the parts together into a coherent whole, students complete a final project by working in groups and producing a recovery plan.

Example:

Assume that you have been asked to design a sustainable, but practical recovery effort for a community of your choice. You can envision yourself as a consultant, an emergency manager, a city/state/ federal official, a department head, a committee chair, the head of the Chamber of Commerce, or a community leader. The plan may be either a pre or post-disaster recovery plan. Your job is to create an initial document that could be presented to the local recovery committee, emergency management agency, and/or elected officials. In this document, you should lay out your vision and recommendations for a realistic, sustainable recovery. I expect that you will:

- select the disaster/mass emergency most likely to impact your community;
- engage yourself in considering both the readings and community context;
- justify what you recommend;
- describe the community in some detail, especially vis-à-vis the five bullets below;
- include consideration of the community in relation to the economy, environment, demographics, and physical infrastructure;
- address vulnerable populations and geographic locations; and
- recommend an organisational framework for implementing the plan.

You should frame your recovery in ways that address these areas (as a minimum):

- Economic vitality.
- Environmental resources.
- Social and intergenerational equity issues.
- Housing.
- Physical infrastructure and lifelines.

As part of your effort, remember to consider issues surrounding debris, volunteer and donations management. In addition, you may want to tie the recovery plan to any existing comprehensive planning effort in your community.

To assist and guide students, detailed outlines from two local recovery plans that occurred in post-disaster contexts are supplied.

Conclusion

Despite the success described, several caveats may be in order. Studies report that online courses are more time consuming for the faculty member than traditional formats, a finding that fits with this experience. The emergency management student market includes both novice and those with experience so the instructor needs to find ways to build confidence and challenge exclusionary cliques. Additional time is spent orienting students to virtual environments and to building a sense of community among participants (Rovai 2002). Group projects, though trying at times, are one method recommended to build community (ibid), an activity that can pair newcomers with emergency management veterans. The instructor may take on non-hierarchical roles such as 'encourager, harmoniser, compromiser, gatekeeper, standard setter, observer, or follower' (ibid)

in order to connect distance learners to the instructor and peers.

Research on Internet classes indicates that numbers beyond 25 are labour-intensive for the faculty member, undermine effective pedagogy, and negatively affect the student (Pachnowski & Jurczyk 2003). Traditional classes can accommodate larger sizes more easily, while larger online classes result in an exponential increase in faculty work load rather than an 'averaging.' Online students also expect more frequent communication, which consumes faculty time (Hardy & Robinson 2002; Hannon et al 2002). Studies recommend eight to 10 students if the instructor utilises synchronous components, but certainly no more than 20 for basic levels of quality interaction (Rovai 2002; Oren et al 2002; Neal 2004).

Yet, it is pedagogy that counts most. To quote Frydenberg (2002), 'unless the instructional design… emphasises the students as a group of learners, individual students are most likely to perceive themselves as interacting within a mutually exclusive student/tutorial relationship with the instructor.' A classroom that is 'less linear and more interactive and dynamic' is thus recommended (Olson & Wisher 2002). Unfortunately, less than 25% of faculty use synchronous (live chats) forms of interaction (Restauri 2003). It is the faculty-student interaction that makes this seminar successful, particularly activities that built relationships among students (group projects) and connect all learners to each other through synchronous means.

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Key considerations for Lifeline utility recovery planning

Brunsdon, Brounts, Crimp, Lauder, Palmer, Scott, and Shephard
explore the issues faced by Lifeline utilities in disaster recovery

Abstract

The key process elements for lifeline utilities in the recovery process following a disaster event can be summarised as:

1. Understanding what needs to be done to recover each utility's operation;
2. Understanding the external constraints on immediate operational repairs;
3. Putting in place interim low-capacity fixes; carrying out immediate tidy-up operations;
4. Strategic decisions—what to repair/rebuild/fully redevelop;
5. Matching internal priorities with external considerations (e.g., priorities of other utilities and the recovery manager on behalf of the community);
6. Formalising works programmes and carrying out design work; and
7. Organising and managing contracts for the physical works.

Establishing and re-evaluating priorities (internal and external) is an iterative process that underlies all of these elements. This process begins at the operational level during the immediate response, with progressively more strategic decisions being required as more information becomes available. Each element has associated challenges or obstacles that need to be addressed and, in many cases, these relate to external considerations outside the direct influence of individual lifeline utilities. Recovery planning for lifeline utilities therefore requires prior consideration of these challenges and how to address them.

The recovery process involves a balance between the restoration sequence that can be physically and operationally achieved by a lifeline utility against the expectations and requirements of the community as established by the recovery manager. Specific understanding of local and national Civil Defence Emergency Management (CDEM) recovery mechanisms is clearly beneficial for utility managers in planning their recovery processes.

This paper explores the issues for lifeline utilities associated with the recovery elements and challenges outlined above, and looks at the long-term recovery issues.

Introduction

Lifeline utilities form part of a wider CDEM categorisation of infrastructure—those elements of the built environment which include hospitals, schools, residential housing, commercial and public buildings. The critical dependency of these elements upon utility services and transportation access is readily apparent.

Planning by utilities for response to emergency events involving their own service is typically comprehensive. The development of interagency capability and connectivity for responding to community-wide emergencies and disasters however requires further collaborative effort. The complexities and uncertainties associated with recovery of operations in such large-scale events mean that to date it has not typically received appropriate attention.

For any given event, some utilities will be more impacted upon than others. The interdependence effect of this on less affected utilities can be significant. For example, the disruption to access via rural roads in the Manawatu/Wanganui region in the February 2004 floods added to the duration of power and landline telephone outages.

The objectives of this paper are to:

- give sectors that depend on lifeline utilities an indication of the steps and challenges faced by lifeline utilities during the recovery phase; and
- provide a wakeup call for lifeline utilities to get involved in recovery planning with CDEM agencies and other utilities.

Disasters provide a unique opportunity to review the strategic objectives of lifeline utilities

The characteristics of recovery for lifeline utilities

Recovery starts from the early stages of an event when response activities are still in progress. The transition from response needs to involve higher level strategic analysis. Key planning decisions that may need to be made in the early stages of an event include balancing the considerations of:

- local repairs to damaged sites, facilities or specific sections;
- possible relocation of services in the worst affected areas;
- improvement or upgrading of part or all of utility systems;
- discontinuance or abandonment of whole sections; and
- replacement of whole sections with new sections.

Disasters provide a unique opportunity to review strategic objectives against other external factors, and require appropriate corporate inputs. The scope of the recovery process for infrastructure is therefore much wider than physical reconstruction. It can be characterised as being where engineers and other operational personnel must actively interface with planners—district planners, organisation strategic planners, and others involved in preparing 10 year Long-Term Community Council plans and five-year regional CDEM Group plans.

This highlights that the recovery process for lifeline utilities is actually limited by people—both the availability of suitably experienced and skilled personnel, and timely and appropriate decision-making within and across agencies.

There is also a need to understand the different organisational and legal contexts that lifeline utilities operate in, including:

- privately owned (commercially driven) vs. public (government or territorial authority) organisations;
- national, regional or local organisations (e.g., telecommunications vs. water services); and
- the absence of any legislation requiring lifeline utilities to provide a service (outside of continuing to operate in an emergency situation).

There are typically no established mechanisms for post-disaster co-ordination across commercial boundaries in key sectors such as electricity and telecommunications. The operational role of the recently formed Electricity Commission in New Zealand in relation to security of supply has yet to emerge. The National Gas Outage Planning Group has developed a *Gas Contingency Plan* for the gas industry, co-ordinating the response to an interruption of gas supplies into or from the transmission system (GANZ 2004). This plan is based on respecting the often-complex commercial arrangements involved while acknowledging that some participants may be required to make short-term contractual allowances for the long-term benefit of New Zealand gas and electricity customers. Both the gas and water (potable) sectors have mutual aid plans in place where utilities informally commit to assisting each other with practical support (tradespeople, spares etc) immediately following a disaster.

Local and national CDEM recovery mechanisms

Civil Defence Emergency Management Groups are required to appoint recovery manager(s) as part of their plan development process at regional level. Local recovery managers within each territorial authority also need to be appointed prior to an event. Specific roles and responsibilities of recovery managers are outlined in a recovery planning guideline (MCDEM 2004).

The activity areas that the recovery manager is likely to oversee include:

- *Damage and needs assessment*
    - Making sure that the assessment process continues appropriately.
    - Identifying resource needs.
    - Arranging surveys to determine recovery needs of the community.

- *Organisational arrangements*
    - Establish a recovery organisation and implement local recovery plan arrangements.
    - Public information and media management.

- *Resource management*
    - Activating relevant working groups (typically including infrastructure).

- *Planning and co-ordination*
- *Monitoring and evaluation*

Utility managers may be asked to be involved (or to provide an alternate) in regional infrastructure recovery management advisory groups. The focus of such groups reflects that of the recovery manager as outlined above.

Civil Defence Emergency Management Group plans must contain the key recovery arrangements applicable to each region, and these should reflect the hazard and risk profile of the region. The *National CDEM Plan* will contain the corresponding national recovery arrangements. At the national level, the Minister of Civil Defence may appoint a Recovery Co-ordinator upon the recommendation of the Director of the Ministry of Civil Defence & Emergency Management.

In the February 2004 floods, a Regional Recovery Infrastructure Task Group was established by the Manawatu/Wanganui CDEM Group Recovery Manager within four days of the onset of the event. This group only met formally on one occasion, but provided a reference point for the associated Road Access Committee that comprised representatives from each of the road controlling authorities in the affected region (i.e., territorial authorities and Transit NZ) as well as the Contractors' Federation. This committee met on a fortnightly basis during late February and March, often via teleconference, focusing on the following aspects:

- Compiling a regional overview of the access status of key roads;
- Collating initial estimates of the costs of repairing and reinstating damaged roads across the road controlling authorities for presentation to central government;
- Clarifying with funding agencies (e.g., Transfund) how normal funding mechanisms would be applied in order to develop a uniform approach;
- Facilitating a uniform strategy for *Resource Management Act 1991 (NZ)* issues; and
- Monitoring actual and potential resource bottlenecks.

This grouping provided a very effective linkage mechanism between:

- individual road controlling authorities and the CDEM Group Recovery Manager, and
- the CDEM Group and central government.

The role of lifeline utilities in recovery: issues, challenges and obstacles

The principal role of lifeline utilities in the recovery phase can be summarised as:

- implementing rapid restoration of essential utility services and transportation; and
- supporting community priorities as indicated by the local recovery manager or nationally appointed Recovery Co-ordinator.

Table 1 explores the implications and interactions by illustrating the issues, challenges and obstacles for each of the key recovery elements. For each issue, challenge or obstacle, a planning action point for either or both of lifeline utilities and CDEM representatives is highlighted. These key recovery elements do not flow as a linear sequence. The dynamics of the process typically features ongoing mini-cycles of internal prioritisation and inter-agency (external) prioritisation with several iterations being involved in some cases.

All *obstacles* have a time implication. The planning issue includes identifying potential critical path disruptions where prior planning makes a significant difference.

The importance of using prior vulnerability assessments to identify critical items for which key spares need to be held in stock, or specific pre-event contingency plans developed is emphasised. Any such analysis should take account of the redundancy and/or design margins provided locally for a network. This provides a direct linkage between this and associated *risk reduction* work carried out collaboratively as part of regional lifeline projects.

Table 1: Key Recovery Elements and Associated Issues and Planning Action Points

Key Recovery Elements	Issues/ Challenges/ Obstacles	Planning Action Point
1 Understanding what needs to be done to recover each utility's operation.	• Moving from initial impact assessment to the much more detailed damage assessment requires a change in focus. • Access to technical resources that can stay involved over a period of time is required. Technical advisers on short-term loan (e.g., via mutual aid agreements) may not be appropriate.	• Planned access to a range of external skills (covering specific site or facility technical assessment through to strategic network planning to support senior managers). • Understanding the limitations of technical assistance that can reasonably be anticipated under sector-based mutual aid agreements. • Prior strategies for managing mutual aid resources once deployed (within and across organisations).
2 Understanding what the external constraints on immediate operational assessments and repairs will be.	• Access (physical damage, emergency services' cordons). • Obtaining specialist plant, equipment and personnel from outside the region or overseas (including delayed border control processes) for direct repairs.	• Understanding key road access vulnerabilities for major events such as flooding or earthquakes. • Understanding beforehand the likely post-disaster levels of service from other interdependent utilities and levels of support from contractors and consultants. • Appropriate stores of key/specialist items that are likely to be difficult to source in quantity at short notice.
3 Putting in place interim low-capacity fixes/carrying out immediate tidy-up operations.	• Obtaining contractor resources (own, additional). • Accommodation and transport for staff and contractors undertaking interim fixes. • Dumping of damaged materials. • Maintaining operational and public safety standards for interim/short-term fixes.	• Backup list of potential additional contract and technical resources.

4 Strategic decisions, including:
• local repairs to damaged sites, facilities or specific sections;
• possible relocation of services in the worst affected areas;
• improvement or upgrading of part or all of utility systems;
• discontinuance or abandonment of whole sections; and
• replacement of whole sections with new.
	• Review of corporate goals, market changes and service viability.
	• Major unplanned capital works programme where special funding needs to be obtained.
	• Understanding the strategic planning implications of replacement insurance cover provisions
		• Ensure BCPs address the project approvals process for extreme events when usual processes/annual plan boundaries may not be applicable.
		  – Note that this is especially important for sectors with additional regulatory layers (e.g., Electricity Commission).
		  – Some organisations (e.g., Transfund) have a percentage of their annual budget designated for emergency events.
		• Ensure that the process requirements of insurance policies for extreme events are understood and included in emergency response plans/ BCPs as appropriate.

Table 1: Key Recovery Elements and Associated Issues and Planning Action Points – continued

	Key Recovery Elements	Issues/ Challenges/ Obstacles	Planning Action Point
5	Matching internal priorities with external considerations (e.g., priorities of other utilities and the recovery manager on behalf of the community).	• Seeking agreement on matters of priority (noting that these may change over time from those initially agreed). – the abandonment of part of a service rather than restoration may have an adverse effect on other utility services. • What are the roles, accountabilities and liabilities of infrastructure advisory groups appointed by the recovery manager? • What is the role of Lifelines Groups in establishing utility priorities? While representing a useful forum, it is doubtful given their informality that they could fulfil a formal arbiting or decision-making function.	• Work with local, regional and national recovery managers as appropriate to understand the processes likely to apply. Include scenarios and anticipated consequences within organisational recovery plans. These should draw on the risk scenarios developed as part of CDEM Group and national CDEM planning.
6	Formalising works programmes and carrying out design work.	• Planning approvals involve RMA considerations. What are the relevance and effectiveness of the emergency provisions in section 330? – Example: emergency works affecting a utility should be advised to the Resource Consent Authority within seven days of the activity to enable further work to occur. Resource consent needs to be subsequently applied for if there is an ongoing environmental effect. • Technical resources (especially design consultants) are a critical resource by the time the scope of works programmes are determined (high likelihood of multi-commitment once the general recovery process is underway).	• Both recovery managers and utility managers need to have a broad prior understanding of regional council consent departments as to how the RMA would be applied (short and medium-term) for a representative range of extreme emergency events. • Plan for early involvement of the Association of Consulting Engineers NZ as resource facilitator.
7	Organising and managing contracts for the physical works.	• Shortage and/or limited capacity of contractors (both specialist and general building contractors). • Additional project management capability required.	• Involve construction and related contractors (who may not have standing contracts) in planning to enable them to identify and understand the demands involved. • Contractual provisions and arrangements to bring in additional contractors if a task turns out to be too big for an incumbent contractor. • Clarifying the ability to negotiate medium-term contracts in exceptional circumstances.

Case Study: the Wellington Fault earthquake

The challenges facing lifeline owners and operators following a characteristic Wellington Fault earthquake have been comprehensively portrayed (Hopkins & Shephard 2001). This paper addressed the timelines for restoration and reconstruction, the quantum of work to be undertaken, work rates, and the availability of resources in the region, and draws a previous report prepared for the Earthquake Commission (Hopkins, Shephard & Lanigan 1999) which aimed to provide information for reconstruction planning.

Key parameters and observations from this modelling study include:

- the regional capacity to undertake overall reconstruction work (general context, not specific to lifelines) is exceeded by a factor of two in years one and three, and by a factor of three in year two;
- damage estimated to be approximately $NZ21 million could occur in the bulk water supply system of the Greater Wellington Regional Council. This makes restoration of the bulk supply critical to the receiving territorial authorities of Upper Hutt, Lower Hutt, Wellington and Porirua;
- consideration of practical timeframes for the restoration and the reconstruction of water supplies indicate a need for construction expenditure of between $NZ0.13 million and $NZ0.69 million per day on this network alone; and
- although clearly this would be a major task, it is considered to be a manageable one if appropriate prior planning is undertaken.

This case study highlights that recovery from a disaster typically represents a massive unscheduled capital works programme for significantly affected lifeline utilities.

Looking ahead: making progress with lifeline utility recovery planning

Recovery planning for lifeline utilities is an area where the CDEM sector and the lifeline utility sector *both* need to place much greater emphasis.

Recommendations

Lifeline utilities should:

- consider recovery phase implications of disaster scale events and their anticipated consequences;
- develop resource supply arrangements for extreme events, giving specific consideration to access to technical and contractor resources;
- focus on establishing and maintaining mutual aid agreements as a medium-term rather than just short-term mechanism post-disaster;
- clarify co-ordination mechanisms (e.g., what is the role of Lifelines Groups in the recovery phase?); and
- give consideration to how the post-disaster social and economic drivers/imperatives may contrast with aspects of current utility service contract arrangements.

The CDEM sector should:

- **locally:** set realistic expectations in the community by facilitating a better understanding of the practical network constraints faced by lifeline utilities (e.g., water can only be restored from the headworks down).
- **nationally:** facilitate mechanisms for rapidly organising commercially-focused utility sectors after a disaster.
- convey recovery plan directions (including community expectations) for lifeline utilities.

The planning phase includes identification of potential critical disruptions

The recovery phase includes rapid restoration of essential services and transportation

Lifeline utilities and the CDEM sector should also work together on readiness aspects. For example, utility mutual aid agreements can be exercised in conjunction with regional CDEM exercises by physically exchanging supervisory or senior level personnel against the backdrop of an emergency scenario.

There are many challenges for lifeline utilities in integrating their planning for major emergencies and disasters with CDEM Groups and central government agencies, typically around the 'many-to-many' nature of the relationships involved. However the collaborative approach fostered by regional lifeline projects and groups continues to be the key to achieving greater engagement, which in turn leads to more effective planning for response and recovery. Annex A of the Lifelines and CDEM *Planning Best Practice Guide* (National Lifelines Coordinating Committee & MCDEM 2003) provides examples of the nature, form and timing of such engagement.

This paper has highlighted potential critical path disruptions to the recovery process for lifeline utilities and identified where corresponding prior planning and active engagement will make a significant difference towards reducing these impacts.

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David spent two years assisting with the recovery process following the 1989 Newcastle, Australia earthquake. This, along with witnessing first-hand the impacts of the Kobe, Japan and Chi-chi, Taiwan earthquakes, has generated a passion for improving CDEM planning for response and recovery in New Zealand. Last year, he and colleagues in Auckland and Christchurch established Kestrel Group Ltd, a consulting practice specialising in risk and emergency management planning.

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Economic and financial recovery from disaster

Handmer and Hillman consider ideas of economic flows that support local prosperity

Abstract

Economic recovery from disaster is about the resilience of local economies, although it may concern regional or national economics, especially in small or poor countries. Is the aim of recovery simply to restore the pre-disaster state? Or should disasters be embraced as opportunities to make local economies more resilient? Overall economic activity is the normal measure, but we are also concerned with what the activity is doing for the people and enterprises within the region under study – including a range of intangible factors. Depending on our spatial and temporal scales, we may find that economic recovery from disaster is partial at best. We may find that the economy boomed following disaster but that some sectors are left devastated. In some cases, there may be no recovery.
We argue that the priority in economic recovery should be on maintaining the economic flows that support the prosperity and activities of the affected area.

Introduction

Disasters destroy assets, undermine the flows of goods and services, and disrupt people's sense of security, thereby forcing reallocation of household, commercial and government finances. Economic and financial recovery is essentially about building resilient local economies. To do this we need to know about the losses and the benefits flowing from the disaster, the impacts on assets, on flows of goods and services and on capital accumulation, and the distribution of these impacts through space and time. Recovery may result in changes in competitiveness through adoption of new technologies when destroyed assets are replaced, and new or innovative approaches to maintaining economic activity during a crisis. Often recovery may be "marketed" to help with sectors especially sensitive to outside views, such as tourism, to encourage investment, or to show progress for political purposes. This may benefit recovery, but may also obscure problems.
The research literature on economic recovery is sparse, although there appears to be a surge of interest in the topic (eg Byrne et al 2004; Rose 2004). A literature summary is not presented; instead reference is made to published material in the text as appropriate.

This paper aims to provide a critical overview of some of the issues in economic recovery and examine some conceptual issues in the context of approaches to recovery. (In this paper "recovery" refers to economic and financial recovery). It presents brief examples to illustrate the main issues; and drawing on this material, offers some suggestions. Specifically, it suggests where limited recovery resources should be spent for maximum benefit.

Economic and financial loss assessment

In disaster assessments economics is often confused with any analysis based on money. However, an economic analysis is based on a particular set of principles. Analyses not based on these principles are usually called financial analyses. Economics is concerned with the impact of an event on the economy of the area selected for analysis. Both positive and negative impacts on this defined economy are counted (based on the principles of cost-benefit analysis). Defining this economy in space and time is a key step. For example, we might want to know how the economy of far North Queensland is managing after the area was hit by a cyclone. The study area could be defined by a number of local government areas and we could then examine the impact on the economy of these areas for the selected time period (also see Queensland Government 2002). For discussion of these issues see BTE (2001); Handmer et al (2002); EMA (2002); and the manuals from the UK's Flood Hazard Research Centre at Middlesex University.

Overall economic activity is the usual measure (macro-economics), but we are also concerned with what the activity is doing for the people, enterprises and economic sectors within the region under study (financial loss also occasionally known as meso and micro-economics). The case studies reported below illustrate the type of losses involved. Following normal disaster loss assessment practice intangibles such as human capital, and social and environmental items, are included.

Scale is critical. In general, the larger and more diverse the economy under examination, the smaller the impact of a given event. The time dimension can dramatically

alter a loss assessment as well. Many losses are made up following a disaster, and other losses may appear. Insurance is a key redistributive mechanism in enabling the domestic and business sectors of the economy to recover, but may not be a good indicator of economic loss.

Measurement of economic impact requires data, and the emphasis now is generally on approaches and sophisticated models that require increasing amounts of high quality data. (Data quality is a universal problem—see for example the Bureau of Meteorology's project on climate data quality http://www.bom.gov.au/climate/change/quality.shtml.) However, appropriate data is often unavailable and some effort is going into approaches that draw on average data for similar circumstances (Handmer 2002). If our interest is on illustrating causal linkages and impacts on parts of the economy not well captured by official statistics, then qualitative and narrative approaches may be more useful (see Benson and Clay 2004).

Aims of recovery: the enhancement of local economic activity

The idea of restoration following disaster is based on an implicit assumption that disasters are abnormal, and the aim is therefore to restore normality. There may be circumstances where disasters are far from abnormal, for example earthquakes in New Zealand or droughts in inland Australia. "Normality" can be a contributing factor to the community's vulnerability to disaster. In other cases, restoration may not be possible or seriously delayed: people may be left with permanent injuries or trauma, parts of the local economy may not be able to re-establish, and the area may be stigmatised as a scene of tragedy. Looked at more positively, opportunities for major change and economic enhancement may present themselves, especially where disasters are not repeated frequently.

Rather than simply restoration, infrastructure and economic recovery offer the opportunity for substantial, strategic improvements following disaster. For example, destroyed infrastructure is frequently replaced with up-to-date facilities, and local commerce may receive new equipment and training. Many analysts argue that ideally, this should be about making the local economy (and community) more sustainable (Monday 2002). Can or should the aim be to go beyond restoration to try to make local economies more sustainable (Monday 2002; King and Gurtner on Bali 2003)? Post-disaster improvement or betterment is frequently mentioned in the context of the need to look forward rather than dwelling on the past (eg Faulkner 2001). Occasionally, disaster may be seen to offer opportunities to some groups for development where it was previously not permitted, for demolition of previously protected structures, and for restructuring of the local economy. It may also provide an opportunity for some individuals to relocate or change and improve their livelihoods.

Any examination of economic recovery needs to be explicit about the macro factors of scale, wealth, and the type of disaster, for example whether it is a rare earthquake or repetitive flooding; and whether the interest is with recovery over a short or long period. Many official recovery efforts run for relatively limited periods of about 12 months, although there is increasing recognition that for many groups recovery can be a very lengthy process. Some sectors of the economy can take many years to regain their pre-impact productivity. Typically only formal economic activity is measured. In all societies informal activity (the so called black or underground economy) is important, and in many poorer areas it may be a key part of people's livelihoods (Syrett et al 2004).

There may be significant differences in economic recovery between rich and poor countries. More research and evaluation of recovery efforts have taken place in poorer countries to satisfy aid donors, and because the impact of disasters often seems large and long lasting (see for example Benson and Clay 2004). (A notable exception may be the assessments conducted by the US General Accounting Office). Similar research and evaluation is required in developed countries (CSMAC 2004).

The aim of recovery should be to ensure that the economy continues to function providing livelihoods and other services for those in the affected area. Recovery programs should support the affected economy so that it can do this. Opportunities to make local economies more sustainable should be sought especially those that help reduce "future hazards and their associated risks." (New Zealand MCDEM 2004: 7). Case Study 2 (page 48) illustrates this forward looking approach. In poorer countries many people prefer investments in livelihood security to those directed at the hazard (e.g. flood levees).

Although the approach of supporting local commerce where possible may seem obvious, it is not universally accepted among economists (IFRCRC 2001). The Red Cross uses the analogy of a leaking bucket, "plugging the leaks ensures that post-disaster resources re-circulate within the local economy rather than leaking out of it" (IFRCRC 2001). Although this idea is based more on recovery in poorer economies, the approach can be applied in Australia and New Zealand, especially in rural communities where aid funds are less likely to recirculate. The recent and ongoing Australian drought is illustrative (Alston and Kent 2004). The NSW drought strategy included provision of hampers to affected landowners. The contents for the hampers were procured locally thereby not undermining local businesses. Similarly, whitegoods have been made available to bushfire affected communities via vouchers redeemable at local stores, rather than donated directly from the manufacturers (Andrew Coughlan per com 26/7/04). Case Study 1 summaries drought impacts on small businesses and farmers.

Case Study 1

Drought in Condobolin, NSW

Condobolin is 463 km west of Sydney and is part of the Lachlan Local Government Area. It became officially eligible for drought relief on 10 October 2002. There are a variety of assistance packages available for both local businesses and farmers who are drought affected (Alston and Kent 2004).

Farm Businesses

Alston and Kent (2004) identify the main impacts of drought on farming businesses which can be tabled as

Impact on Farming Business

Asset (Stock) Impact	Flow Impact
– Sale of stock purchases	– Postponement of capital
– Sale of capital equipment	– Diminished compliance with OH&S
	– Use of off-farm employment
	– Focus on survival, not maintenance
	– Inability to afford labour for drought work
	– Restructuring of debt

In the case of Condobolin:

- Production from livestock fell by 50%.
- Some farm businesses were without crop income for 2–3 years.
- Most thought the drought had cost them between $60,000 and $100,000.
- 72% of partners/wives have been working off the farm.
- Large reliance on welfare/charities such as St Vincent de Paul etc.

Small Businesses

Alston and Kent (2004) found that small businesses in smaller towns were hit hardest, with only a small proportion being aware of available assistance.

For Condobolin the impacts were:

Economic Impact on Small Business— Condobolin Drought

Asset (Stock) Impact	Flow Impact
Volume of stock down and non-availability at times of certain items. Expenditure.	– Employment of town people in small business is reliant on farm. – A marked downturn of 60%–75% has been noted. "Shop local campaign has helped. – Farming contractors down by as much as 86%. – Businesses forced to diversify. – Increase in debt being carried by small businesses up to 20% higher than usual. – Financial support not really designed for small business or farmers, eg Centrelink.

Other financial and economic losses

Tangibles	Intangibles
– Youth employment suffers as positions such as apprenticeships disappear. – Local employment diminished. eg one local government dept had shrunk from 23 full time positions to 6.	– Exit of human capital and expertise in pursuit of employment. – Loss of next generation of farmers as their families encourage them to pursue other careers. – Affect on quality of education of children. – Skill of workforce declines as youth forced to take unskilled labour instead of learning trades.

Assets and economic flows

Stocks and flows

Economic losses can be considered in terms of capital or assets, and the flows of goods and services (production, income and employment). Some households and communities may have considerable assets but limited flows while others may have virtually no assets but substantial flows of funds. The latter would include those dependent on remittances and welfare, as well as many service industries. In contrast some communities may depend on assets such as fruit trees, or on a tourist attraction like coral reefs, that once destroyed, take years to replace while not producing income. Note that if tourists go to another location within the specified economy, for example a State, then the sector and the economy may be no worse off.

Obsolete industrial plants or even recreational facilities may not be replaced because the start up or replacement cost, and/or the cost of complying with contemporary standards, is prohibitive. This may leave the community with the challenge of reinventing itself, something that is very difficult in areas with declining economies. From a recovery perspective, an interesting question concerns whether economies dominated by flows are more resilient than those dominated by capital. Table 1 sets out some examples of disasters by flow and stock impacts. Case Study 2 details an oyster contamination episode and illustrates some of the losses and issues and highlights the importance of flow impacts (as does Case Study 1).

Much recovery effort and political attention typically focuses on asset restoration: it is visible, easily valued and politically easy to manage. From a social perspective, community members may fast-track the physical recovery in order to convey a facade of holistic recovery. This is also due to psycho-social aspects of community recovery whereby the appearance of reconstruction may be therapeutic. Often damaged assets are replaced with new updated facilities increasing the capital wealth of the community, businesses or householders. However, this may lead to increased costs for some asset owners if, for example, householders find that they face increased local taxes or insurance costs for the new assets. Replacing assets creates much activity and the appearance of a minor economic boom (assets are not counted in GDP figures but replacing them is). This may be misleading if local people and enterprises do not benefit (see below "Do economies boom..?").

The 2001 *World Disaster Report* (Rietveld et al 2001) calls the emphasis on assets during recovery "Thing Theory" and finds that the approach can damage the local economy rather than assist it for two basic reasons: the financial benefits are likely to go to large companies from outside the affected area (also see above under the "Aim of recovery"); and it takes funds away from helping local enterprises through training, grants and loans. As observed it also ignores the informal sector which may be the major part of a local economy especially in poorer countries. Many disasters do not involve asset destruction in which case the issue would not arise, but lack of asset damage may also mean lack of visibility— and lack of recovery support.

Table 1. Examples of types of disaster by economic category

Economic Flow: Losses Dominate (Most common, but often less visible)	• loss of power to the commercial centre of Auckland for two weeks; • loss of the gas supply for 5 million people in Victoria for almost two weeks; • the grounding of Australia's light commercial aviation (fuel contamination); • billions of dollars lost by Australians through corporate "collapses"; • anthrax hoaxes and media-fuelled anxiety about places and activities.
Combination of assets and flows	• Major earthquakes; • Deaths of 15 young people in the Childers fire; • UK foot-and-mouth disease resulting in the partial collapse of the farming and tourism sectors.
Assets (or stock) Losses Dominate (Most spectacular and visible. Asset destruction will generally produce flow losses as well)	• Tornados; • Complete destruction by fire of hundreds of homes and critical infrastructure in the Canberra bushfire; • Storm damage to tens of thousands of buildings and vehicles in a few minutes in the Sydney hail storm.

Case Study 2

Oyster Contamination at Wallis Lake, NSW

(Drawn from Department of Health and Ageing and Health Council 2003)

Wallis Lake is located on the mid-North Coast of New South Wales. It possesses well-established industries in tourism, boating, as well as commercial and recreational fishing. Wallis Lake also produces over 2.4 million dozen oysters (21,000 bags) per annum. This translates into a wholesale value of some $8.5 million (about $3.50 per dozen oysters).

In 1997 444 people around Australia developed Hepatitis A through consumption of oysters from Wallis Lake. One in seven cases was hospitalised and one death occurred. A class action suit was launched against 14 different respondents.

The Great Lakes Council undertook a survey that revealed that many of the commercial and residential premises were releasing effluent into the waterway or were at high risk of doing so. As a result the sewerage system was upgraded and policies to improve water quality were put in place including increased monitoring, more public toilets, regulations regarding waste disposal from boats, and fines for non-compliance. The episode caused reputation problems for the whole oyster industry in NSW, and the solutions have benefited the whole industry not simply that located at Wallis Lake.

The local, State and national costs and benefits of the contamination episode are summarised in the Table.

Negative Economic Impacts

ELEMENT	FLOW IMPACT	ASSET (STOCK) IMPACT
Oyster Industry	Local oyster farmers say that market share has not recovered and remains about 15%–20% below pre-1997.	
Fishing Industry	Lost up to 30% below the market value. Local production fell by 75% ($1000 a day).	The Wallis Lake commercial fishing catch dropped 9% from the previous four years.
Health		National health cost of a Hepatitis A outbreak (500 persons, one death, 70 hospitalised), is $12.1 million.
Tourism	Accommodation take was down $1.1 million in the 2nd and 3rd quarters of 1997 in the region.	
	About 40,000 fewer guest nights in the region in the 2nd and 3rd quarters of 1997 than in 1996.	
Employment	Employment in oyster farms fell by 60 workers.	
Public Perception		Product name and investor and consumer confidence suffered for oysters state wide—the value of the industry fell.

Positive Economic Impacts (DHACA, 2003)

ELEMENT	FLOW IMPACT	ASSET (STOCK) IMPACT
Infrastructure		$200 million expansion of the Country Towns Sewage Scheme for NSW. $11m for Wallis Lakes area.
Compliance Stronger legislative controls over on-site sewerage systems led to the following changes:		
Property Value	Elimination of sewage smells improving property prices. More opportunity to subdivide because of sewerage services.	
Local Business	Local businesses benefited by avoiding crisis revenue loss.	
Health	Consumers avoid ill health and community avoids associated costs.	
Oyster Industry	Oyster producers avoid potential litigation.	Increased value (and output) due to upgrade of facilities.
Tourism	Less risk of tourism service providers being unable to open. Improved water quality results in long term increase in visitor use, tourism, and boating.	

We argue that the emphasis in economic recovery should generally be on maintaining economic flows within the affected area. Achieving this may require the protection of certain assets. For example fruit trees or vineyards take many years from planting to full productivity so their destruction is particularly serious.

Continuity planning and management

Continuity planning, whether for business, government or other sectors, is an approach dedicated to protecting economic (and social) flows rather than simply focusing on the protection of assets. It also has the advantage of being generally sound business practice as, if properly done, it makes the enterprise concerned more resilient to most shocks. The focus on keeping the enterprise running acknowledges that key assets and facilities may be unavailable for many reasons following disaster including those related to access, safety and criminal investigations. This may be the case even if the facilities are relatively undamaged. Implementation of continuity (and therefore recovery) management starts with disaster warnings. Unless there is no warning, it should not wait until disaster impact.

Do economies boom after disaster?

Typically, local economies in rich countries receive massive inflows of resources (insurance, aid, money spent by media and emergency response, rebuilding, etc) during and following a disaster, provided the impacts are visible or well insured. This has led some observers to argue that disasters are economically beneficial. Another aspect of this apparent benefit is that outdated or obsolete equipment is replaced with state-of-the-art facilities. In economics, only the depreciated or market value of the destroyed equipment can be counted as a cost of the disaster. The rest is a benefit (for the local economy) of the event. Skidmore and Toya (2002) argue that disasters stimulate long-term economic growth, although this appears to be the case primarily for rare earthquake events (Benson and Clay 2004). Such booms may be economically misleading, as funds for this must come from elsewhere within the economy under consideration, or from outside in the form of aid or insurance. This reinforces the importance of spatial and temporal scales in economic assessment.

As outlined earlier, economic assessment is primarily concerned with the net economic impact of a disaster on the specified economy, and with the distribution of the costs and benefits. There is evidence from the US that even though a local economy may boom following disaster, some sections of the affected community will be substantially worse off (Albala-Bertrand 1993). An enquiry into wildfires and rural poverty in the US reached similar conclusions finding that severely disadvantaged communities did not benefit from available recovery programs following wildfires (PWCH

Fruit trees and vineyards are considered economic assets

2001). Similar patterns have been found in poorer economies (IFRCRC 2001).

Conclusions

Economic performance is a (perhaps, the) central factor in modern economies, and few if any localities are content with static or declining economic activity and livelihood insecurity. Economic and business aspects of recovery should therefore receive high priority. This attention should build local resilience by ensuring that local livelihoods and local commerce are restored or enhanced, and by reducing the risk of future disasters. A macro-economic approach needs to be combined with examination of distributional and sustainability issues to satisfy the New Zealand MCDEM recovery principles (2004).

We have three substantive conclusions:

- Clarity over the short and longer-term aims of economic recovery is fundamental. To what extent should change and enhancement be encouraged? This is closely connected with the idea of using disasters to move towards a more sustainable local economy. Some apparently positive changes may make local economies less sustainable.

- We take the view that economic recovery refers to local enterprise in the affected area as much as to the performance of the overall economy. Good

performance by the macro economy may not indicate that local livelihoods and enterprises are healthy or recovering from disaster. Recovery strategies need to be carefully formulated to avoid undermining local commerce.

- Economic flows such as income, rather than assets (or stocks) per se, are generally critical to local economic performance. The emphasis should be on maintaining these flows within the local economy— if necessary by the protection of certain assets, for example environmental or other assets on which a local tourist industry is based.

Recovery effort should give priority to local employment, productivity and income, rather than major asset restoration. This is often an issue of visibility as many disasters do not involve obvious asset destruction.

Reconstruction of symbolic or community assets may be important for social recovery but may do little for the local economy. Often the reconstruction that is obvious to visitors and media as indicating strong economic recovery may not be seen positively locally.

Continuity planning should help mitigate disaster impacts, prevent a post-disaster slump in the local economy, preserve a sense of "normality", and speed recovery. It should be encouraged for commerce and other sectors.

Acknowledgements

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R

The promise of destruction

*Christopher McDonald examines whether earthquake
devastation helps cities reach new urban aspirations*

Abstract

Natural disasters seem to provide unique opportunities for correcting planning problems and accelerating urban design initiatives. For a city on a fault line, a massive earthquake promises to deliver an urban tabula rasa: a blank slate on which a contemporary vision of an ideal city can be mapped out. However, as the examples of San Francisco in 1905 and Napier in 1931 demonstrate, the real possibilities for reconstruction are far more limited. While it is rare for a ruined city to be restored exactly to its former state, it is equally unusual for natural disasters to generate grand new urban designs.

San Francisco—Daniel Burnham's failed plan for a 'Paris' on the Pacific

By a remarkable coincidence, Daniel Burnham's master plan for a new San Francisco arrived at City Hall just days before the great 1906 earthquake. Eighteen months earlier, America's most eminent city planner had been engaged by a group of wealthy citizens to redesign the city's uniform street grid and recreate California's principal metropolis as a new Paris or Vienna. Burnham was so enamoured of San Francisco's peninsula location and picturesque terrain that he offered his services at no cost (Baker 1973 p49). Along with his associate Edward H Bennett, he took up residence in a purpose-built cottage near the summit of Twin Peaks overlooking the city. From this vantage point, he composed a network of radial and concentric streets, artfully adapted to the peculiarities of the site and the existing pattern of settlement (Hines 1974 pp181–187).

Burnham was well aware of the difficulty of implementing such a proposal in an established city, albeit one that was little more than sixty years old. He stressed that the design would need to be built incrementally and opportunistically over many decades. He even implied that the whole plan might never be realised. But he argued that a bold comprehensive design provided better preparation for the future than a more modest proposal constrained from the start by practicalities (Baker 1973 p49).

Then, on 18 April 1906, America's greatest urban catastrophe changed these prospects dramatically. All Burnham's original drawings and most copies of

Governor General touring Emerson Street, from Conly
The Shock of '31 *(p.145)*

his plan were destroyed in the fires which followed the earthquake. Yet the destruction promised to accelerate San Francisco's transformation into a model of Beaux Arts urbanism. San Francisco's mayor and reconstruction committee adopted Burnham's proposal as a ready-made blueprint for the city's recovery. After the initial reactions of shock and grief had passed, the whole nation followed the plan's progress with eager anticipation. Burnham himself cut short a vacation in Europe and travelled to San Francisco to survey the destruction and promote his timely design (Moore 1921 p2). These events caused one commentator to confidently predict:

> *The execution of what was to have been a slow and gradual improvement and metamorphosis, necessarily made difficult by existing limitations, will now be rendered simple and direct through the ruthless and complete ravages of earthquake and fire.*
> *(Sheffauer 1906 p94)*

Before long, this optimism seemed ill-founded. Some of San Francisco's more pragmatic citizens argued that attempts to build a Paris on the Pacific would only delay recovery (Hines 1974 p190). In their view, the fastest way to rebuild the city and restart businesses was to retain the existing layout of streets and lots. As one prominent supporter of the plan wrote: 'It was the worst time to talk about beautification' (Moore 1921 p3). In the face of mounting opposition to the plan, city and state officials pleaded with Burnham

Presbyterian Church and Tennyson Street, from Conly The Shock of '31 *(p.129)*

to return permanently to San Francisco to supervise reconstruction and sell his vision to an increasingly sceptical public. However, despite the apparent opportunity which fate presented to him, Burnham declined these requests. He claimed that his professional commitments tied him to Chicago (Hines 1974 p193). But he may also have sensed that the devastating earthquake and the imperative to rebuild quickly actually *reduced* the likelihood of his master plan ever being realised.

Napier—the most modern city in the world

Napier had no ready made master plan when disaster struck on 3 February 1931. At the time, the city's main civic improvement initiative was a modest street widening scheme designed to adapt the town centre's tight nineteenth-century grid for use by motor traffic (Conly 1980 p172). But Napier did have a compelling precedent. Six years earlier, another California city had suffered a devastating earthquake. Santa Barbara used this opportunity to adopt a spurious yet romantic 'Spanish' identity. The town's makeover was far more successful than San Francisco's (Staats 1990 ppix-x). Within a decade, Santa Barbara became the most celebrated example of the emerging 'Californian' style of architecture.

For many people in Hawkes Bay, Santa Barbara provided the ideal model for Napier's reconstruction. Some proponents of this approach sought direct imitation: a simple transference of the Californian style to a superficially similar environment on the east coast of New Zealand. But those who studied this precedent in more detail might have noticed two important underlying features of Santa Barbara's recovery strategy. First, the town's renaissance did not involve dramatic alterations to its street pattern. The principal instrument

of change was a 'Board of Review' equipped with architectural guidelines based on a loose formulation of the Californian style (Staats 1990 pv). In this way, Santa Barbara's new identity emerged not from monumental public works but from an early form of design review applied incrementally on a case-by-case basis to many private reconstruction projects. The second salient feature of Santa Barbara's recovery was the fact that the post-earthquake Board continued a well-established campaign for aesthetic control. As early as 1901, a group of well-heeled residents called the Plans and Planning Committee were actively promoting an invented version of 'Spanish colonial' architecture as an agreeable style for Santa Barbara. Prior to the earthquake, the group had most effect among like-minded property owners in the town's wealthy hillside suburbs. After 1925, the style received official sanction, and the design review process ensured that it was much more widely adopted (Staats 1990 px).

Santa Barbara's experiment with aesthetic controls persuaded a group of Napier architects to work in a similarly uniform style. Assisted by the co-operative spirit that accompanied early reconstruction efforts, and encouraged by the town's Reconstruction Committee, many of Napier's architects adopted the plain flattened surfaces and horizontal emphasis now loosely defined as Art Deco (Wright 2001 pp 119–121). The style was modern but not revolutionary. In fact, the visual coherence of the new-look Napier resulted partly from a continuation of existing trends. Spanish colonial and art moderne motifs were already fashionable in pre-earthquake Hawkes Bay and, by 1931, a number of recently built structures displayed the hallmarks of Californian architecture.

Napier also had visionaries who saw the earthquake as an opportunity for fundamental changes to urban structure, not just an updated architectural vocabulary. Several plans were prepared for modern, comprehensively planned building complexes. One of these occupied an entire city block, and included a continuous first-floor terrace planted with lush vegetation. Another proposal showed a new entertainment centre spanning the city's Marine Parade (Wright 2001 p120). Soon after the disaster, some citizens even suggested abandoning the town centre and building a completely new commercial and cultural district on the opposite side of Bluff Hill (Wright 2001 p119). This idea might have exploited the broad expanse of flat land which was raised by the earthquake from the Ahuriri Lagoon. Here, an ideal city could be laid out without regard for Napier's nineteenth-century origins.

None of these ambitious plans came to fruition. Rubble from the town centre was used to extend a building platform along the seaward edge of Marine Parade. In time, this became the site for a chain of foreshore

Napier Town Centre, 1920s, from Mcregor the Great Quake (p.10,11)

Napier Town Centre, 1933, from Mcgregor the Great Quake (p.60,61)

amenities. However, the city's famous esplanade began with the Municipal Baths and a band rotunda, both constructed well before the earthquake (Conly 1980 p173). Otherwise, the city's core was rebuilt largely on its existing footprint. Reconstruction accelerated the town's street widening programme. Property owners along Tennyson Street agreed to sacrifice three metres from their frontages to accommodate a more generous carriageway.

Three other streets were enlarged in similar fashion, and twenty-three corners were splayed to improve motorists' sight lines at intersections. Several central city blocks acquired service lanes (Conly 1980 pp 172–173, 184). These new alleys provide a fascinating example of urban 'retro-fitting' which could never have occurred without widespread destruction and rebuilding. But, taken together, the changes to the city's plan were pragmatic, localised and superficial. By the early 1940s, 'before' and 'after' photographs depicted dramatic changes in Napier's appearance. For a time, local boosters called it the world's most modern city (McGregor 1989 p67). However, most transformations can be attributed to a worldwide shift in architectural fashions, and to the appearance of whole new residential or industrial suburbs on reclaimed land near the outskirts of the city.

The eternal city versus the ideal city

San Francisco and Napier illustrate the contradictory human impulses which accompany recovery from natural disasters. On the one hand, city dwellers look to their built environments for signs of stability. This need is heightened in the aftermath of a catastrophe, when survivors demand a quick return to normality. By and large, cities answer this need. Visitors to Napier and San Francisco marvelled at how quickly these cities resumed day-to-day functions, albeit in makeshift accommodation. Their capacity to survive destruction resulted from great size, massive infrastructure and

a high degree of redundancy and autonomy among their parts. However, the persistence of urban forms also expresses the human quest for continuity. For this reason, images of destroyed or abandoned cities are shocking. They create the prospect that, individually and collectively, we will one day vanish without trace. So a ruined city presents a compelling invitation to rebuild on the foundations of the old. This urge to replicate what has been lost is prompted partly by economic imperatives, but it also reflects people's desire for tangible links with their past and their future.

However, there is a second image deeply embedded in most urban cultures. Confronting the eternal city is the ideal city, the future city: utopian, visionary and critical. When the histories of cities on fault lines are written, the awful prospect of destruction is tempered by the promise of renewal. This prospect is always seductive because there are many urban form models to choose from. Cities have been devised as cosmological diagrams, machines, organisms and even texts. More recently the city has been viewed as an information system or even a giant theme park. None of these conventions are static. Ideas mutate and sometimes become their opposites. For example, over a thousand years, the place of nature in the city has been reversed from a chaotic, menacing 'outside' to a benign refuge for natural order. Another fluctuating image is the machine. Once it represented dynamism, modernity and material welfare. Now, it has become a symbol of alienation and control. These transformations remind us that the city is constantly being reinterpreted. A calamity is an opportunity to start over again by reinventing the city in accordance with the latest prescription for well-being or the most persuasive explanation of contemporary urban culture.

There are two more reasons why Burnham's plan for San Francisco stood little chance of being implemented. Even if the will to create a better city exists, a natural

disaster reveals that urban form is remarkably resistant to change. Regardless of the extent of the damage, attempts to reinvent cities following catastrophes are likely to be frustrated. This is because two of the most significant determinants of urban form, topography and property lines, survive natural disasters intact. As San Francisco and Napier illustrate, terrain predetermines much of the character of earthquake-prone cities. In Napier, the 1931 quake triggered landslides, raised beaches and helped to drain swamps. In some localities these changes were pronounced.

Yet, on a macro scale, the city's natural setting changed little. Napier's subdivision pattern proved equally robust. In the central city, changes to rights-of-way and private lots were superficial. Indeed, the destruction of Lands and Survey Department records and the displacement of boundary markers meant that owners had every incentive to rebuild on existing sites so as to avoid protracted surveys and negotiations (Conly 1980 pp188–189). Property lines and public rights-of-way endured because they had an abstract existence as well as a physical one. While many constructed boundaries collapsed and paper records burned, the legal titles to land persisted and were painstakingly recreated following the earthquake.

Planning for the 'Big One'— earthquakes and urban design in Wellington

The remainder of this paper focuses on informed speculation rather than historical fact. Using Wellington as an example, it investigates whether a major earthquake could help a city to realise its urban design aspirations. Wellington has not suffered the kind of devastation experienced by San Francisco or Napier, but it faces a well-recognised seismic risk. When the Big One comes, is it likely to clear the way for a radical redesign of the central city?

Before one can answer this question, it is necessary to consider how the current generation of Wellingtonians would like their city to look in 20, 30 or even 50 years. Given the lessons of San Francisco and Napier, it would be pointless to suggest replacing existing street patterns with a whole new network of monuments and public spaces. History indicates that the plans most likely to be implemented during the recovery period are those formulated long before disaster strikes. Wellington has a number of major urban design projects in the pipeline. If the city council's initiatives are combined with the author's wishful thinking, it is possible to predict substantial changes to the area within the Town Belt:

- The existing Lambton Harbour redevelopment is joined by two new urban villages on redundant port and rail land.
- The notorious motorway extension is superseded by a 'triple bypass' which disperses east-west traffic through the previously impervious Te Aro street grid.

- On Cable Street, the New World supermarket yields its site to a larger Waitangi Park which preserves an uninterrupted view shaft down the landscaped axis of Kent and Cambridge Terraces.
- Te Papa (National Museum of New Zealand) is embedded within a matrix of pedestrian-scaled city blocks, while canals convert the Herd Street Post Office and the Overseas Passenger Terminal sites into a small island.
- The imposing but unloved New Zealand Post headquarters disappears to allow a broad swath of open space between Parliament and Glasgow Wharf.
- A new city park appears mid-way along Cuba Street, and apartment developments repair the eroded southern and western edges of the Te Aro grid.

Would any of these projects be accelerated by some vigorous shaking along the city's main fault? Clearly, none of the plans are predicated on a 'doomsday scenario' in which large tracts of the city are razed and made available for urban renewal. Whether or not an earthquake provides a useful catalyst for realising these improvements depends partly on the location of damage. According to the Wellington Regional Council's 1996 *Combined Earthquake Hazard Map,* central city buildings and infrastructure are most at risk in areas of soft natural sediments and poorly compacted reclamations. These zones account for most of the land between the city's natural shoreline and the present waterfront. They also include an ancient waterway which skirts the western slope of Mt Victoria. Given the council's present focus on waterfront developments, there is an intriguing degree of congruence between probable extent of destruction and the sites of major urban design initiatives.

Around the edge of Lambton Harbour, the magnitude of the damage may cause the present waterfront redevelopment plan to become obsolete. Since it has taken 20 years to reach a consensus on the current design, such radical change may hamper the development rather than hasten it. Nevertheless, an earthquake might introduce some attractive new opportunities. Finger wharves and old warehouses may be lost, but the threshold between city and sea could become more indented and more varied. Waterloo, Jervois and Customhouse Quays will almost certainly be destroyed. However, they would soon be rebuilt either as wide tree-lined boulevards or as a new esplanade, depending on prevailing attitudes to pedestrians and traffic. The Post Office headquarters sits on shaky ground, and may be damaged beyond repair. Its demolition would permit Parliament grounds to be extended to a new boat harbour and an artificial beach where wakas (canoes) could land on ceremonial occasions.

Further north, between Thorndon and Kaiwharawhara, the implications of earthquake damage are even more profound. Here, a disaster could trigger positive changes to the city's transport infrastructure. If the container

terminal is severely damaged, port operations may move to Seaview or to other more competitive North Island locations. This would release what remains of the Thorndon reclamation for a new inner-city district which rivals Te Aro in terms of size and proximity to the CBD. However, the most unstable areas of reclaimed land would likely be transformed into parks and wetlands.

Wellington's rail system would also be rationalised. With no shipping to serve, freight lines could disappear, creating room for light rail and high-density housing. Damaged culverts, water mains and other underground services would be rebuilt at great expense. But this repair work could tip cost-benefit equations in favour of a Britomart-style tunnel bringing passenger trains to the northern end of Lambton Quay. Thorndon Quay could become a prime retail address. If offices and apartments replace the present rail sidings, this gracefully curving street could be perceived as a natural extension to the so-called Golden Mile. Along its eastern frontage, a grid of new streets could provide frequent connections with the harbour, causing Thorndon to become a waterfront suburb once again.

In other parts of the city, the areas of greatest risk do not coincide so closely with the locations of planned civic improvements. Te Aro appears to offer least opportunity in this regard. This district has one of Wellington's highest concentrations of unreinforced masonry buildings. But better subsoil conditions mean reduced hazards for modern or lightweight construction. A tongue of loose sediment between Courtenay Place and College Street might produce a large enough pocket of damage to allow an eastward extension of Ghuznee Street. Another hazard area could become the nucleus for much needed redevelopment around the ragged intersection of Victoria Street and the proposed bypass. Sadly, there are fewer prospects for rebuilding elsewhere along the erratic edges of these two arterial roads. In the centre of Te Aro, no single location presents itself as the obvious site for a new neighbourhood park. But some of Wellington's ancient streambeds might reappear: first as trails of destruction, then as a series of canals or leafy linear reserves.

Conclusion

The process of urban development is most often an empirical one. Expedient, fragmentary and incremental: city form frequently responds to circumstance rather than a perfect idea or a predetermined plan. Natural disasters seem to offer a different kind of growth. They promise to deliver an urban tabula rasa: effectively a new civic foundation without context or compromise; a blank slate on which a contemporary vision of the ideal city can be mapped out. Yet the real possibilities for recovery are more limited. While it is rare for a ruined city to be restored exactly to its former state, it is equally unusual for natural disasters to generate

grand new urban designs. In the absence of a despotic ruler or a totalitarian government, a city survives catastrophe by building a likeness of its previous form. Ambitious plans may be realised more quickly as the result of an earthquake, but only if the projects have wide public acceptance before disaster strikes. Even then, the fate of these improvements will depend on the distribution of damage. In Wellington, major design initiatives coincide with the areas of greatest seismic risk. However, this in itself provides no guarantee of implementation. Like all city development, the recovery process is shaped by many competing factors, and the outcome is difficult to predict on an urban or architectural scale.

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After the Bali bombing – the long road to recovery

Yetta Gurtner presents aspects of Bali's recovery and looks at the strategies and lessons for disaster management and tourism

Abstract

Few would dispute that the terrorist bombings of October 2002 precipitated a crisis for Kuta and Bali. Beyond the direct impacts, the tourism sector was devastated and the community that had become reliant on this revenue experienced significant socio-economic effects. Through a description of emergency response efforts and the local atmosphere both three and 18 months after the event, it is possible to understand some of the emergent issues and recovery strategies developed. While academics and practitioners generally recommend the use of an integrated crisis management plan, the Bali experience demonstrates some of the accomplishments and obstacles in achieving such sustainable and holistic participation. Beyond the tragedy, effective community recovery provides the opportunity to develop greater defence mechanisms and resilience.

Introduction

At approximately 11:20pm, Saturday October 12, 2002, the idyllic island paradise of Bali was rocked by a series of devastating explosions. Paddies Bar and the Sari Club on the main street of Kuta bore the brunt of the impact. Both entertainment venues were packed with unsuspecting tourists, staff and revellers; many others were in the vicinity. Despite medical and emergency response efforts, 202 people died as a result of these blasts and hundreds more were injured—with varying degrees of severity (ABC Online 2003).

Revealed as an act of terrorism, the Bali Bombings affected more than just the direct victims and their families. Amidst altruism and adversity, the community of Bali has struggled to regain some sense of stability and normalisation following this tragedy. While international media attention assured emotional and financial support, negative images and growing concerns regarding safety served to undermine the tourism industry (Kalla 2003). Dependant on the income generated through tourist expenditure, many individuals and businesses in Bali have been faced with the loss

Associated business and economic impacts include business closures

of their livelihoods. Beyond the immediate response, rehabilitation of physical infrastructure and short-term provision of aid, effective disaster recovery efforts need to address all impacts on the community—with an aim of sustainability. Implicit in such revitalization is greater local resistance and resilience. The challenge for Kuta and Bali has been for the various organisations and agencies to effectively collaborate, strategise, and achieve, in a situation of limited resources.

Theoretical perspective—integrated crisis management plans and tourism

A review of the general disaster relief literature suggests that the formation of an effective partnership between businesses, the humanitarian organisations, all levels of government and the local community (stakeholders) should ultimately reduce social vulnerabilities (Corporate Social Responsibility Forum 2003). Additional research relating to crisis conditions in tourism-reliant destinations by both academics and industry professionals such as Somnez, Apostopoulos and Tarlow (1999), recommends that such a partnership can establish greater socio-economic resilience through the development of a comprehensive crisis management plan and associated recovery marketing strategies. Based on the experience of this terrorist attack, it is apparent that the community of Bali needs to be better prepared for the event of any crisis—natural or man-made.

Respected organisations such as the United Nations Development Program (UNDP 1992) and World Health Organisation (WHO 2002) propose that the

Whether attracted by the cheap deals available, or conducting a pilgramage to 'Ground Zero' an obvious return in visitor numbers has helped reaffirm local commitment to Bali's tourism industry

"ideal" design for an integrated crisis management plan incorporate concepts of awareness, planning, response and recovery. Associated issues such as security, regional stability, contingency planning, available resources, emergency procedures, communication, rehabilitation and mitigation, need to be clearly addressed. Successful development and implementation of such a plan requires familiarity, understanding and training at all levels of society. To remain effective each element must also be regularly reviewed and updated. As this type of crisis management is not limited to the emergency responders or government departments, it is recommended that be consigned to a co-operative of relevant stakeholders, to work as an independent organisational entity with the full representation of all involved (Mansfield 1999, ADPC 2001). Continued budgeting expenses should be borne by participants from both the public and private sector.

Given the strong relationship between positive perceptions and socio-economic viability in areas of high tourism dependence it is considered prudent to ensure that all stakeholders are included in this concerned partnership (Bierman 2003). Informed tourism advice and experience would ensure that relevant destination image, marketing, and promotional initiatives, are included at all phases of the crisis management plan. Case studies in the book *Tourism, Crime and International Security Issues* (Pizam and Mansfield 1996) reveal that effective tourism strategies have included media liaison,

public relations, provision of credible and accurate information, and partnering with law enforcement officials. While targeted advertising, active promotion and the hosting of conferences and international events may be used to restore regional, domestic and international confidence proactive research and analysis can identify new opportunities and potential markets.

Beyond increased resilience the purpose of any crisis management plan is to improve a community's capacity to efficiently respond to a hazard—whether threat or reality. Constructive crisis management should be integrated, holistic and sustainable, rather than simply reactive. It is actually within the process of planning that requisite communication and public/private sector partnerships may be established. Through the open, multilateral sharing of information, experience and knowledge it is possible to anticipate a diversity of problems, formulate appropriate response techniques, and determine organisational responsibilities. In the event of a crisis the existence of an effective and widely understood plan can facilitate rapid assessment, co-ordination and the implementation of an appropriate response effort. Prior consideration and discussion can help reduce suspicion, jurisdictional issues, confusion and duplication. In effectively communicating and managing a crisis, negative impacts can be minimised and community recovery may be achieved sooner (Beirman 2003).

Despite admirable response efforts and altruistic intentions it is apparent that prior to the tragic events of October 12, 2002 Bali had no operational crisis management plan or integrated recovery strategies. While subsequent programs and activities have attempted to address issues of social and economic development, crisis management and promotion, experience has revealed some of the disparities between theoretical ideals and practical realities.

Initial response—disaster and reactions

Response efforts immediately following the Bali Bombing were typical of most disaster situations (LaPlante 1988). The main priority was to respond to the emergency and keep losses to a minimum—this included search and rescue efforts, locating and bringing survivors to safety, provision of basic first aid, and crowd control in the immediate vicinity of the incident. Images show how the fires were raging, the electricity supply was severed, and the area was strewn with debris, broken glass, metal and twisted vehicle shells. In addition to those caught in the impact of the blast, the explosion attracted the attention of the curious, concerned and those who simply wanted to help.

The injured who were able to walk or be carried were taken to the closest medical facilities by any means available. As rapid emergency response teams and other volunteers managed to establish access to the site, other victims were transported in ambulances. Witnesses described how the numbers, severity of injuries and rapid influx of victims at the medical centres proved overwhelming (Ellis 2003, Stevenson and Baker 2002). There were insufficient trained personnel; limited supplies and facilities, and inadequate medical equipment. Many patients were treated in hallways while doctors and medical staff tried to maintain sterile conditions. The morgue was unable to accommodate the growing numbers of the deceased. Volunteers from all sectors of society, including tourists, immediately made themselves available to the hospitals to help in tasks such as nursing and comforting the wounded, giving blood, operating the telephone lines and setting up a database of the missing and dead.

Within days the Bali Recovery Group, a co-ordinating committee of existing local Non Government Organisations (NGOs), was created with the aim to "help deliver the best services, collect data and minimise duplication of effort" (Bali Recovery Group 2004, Bali Relief Ubud 2002). Arrangements were made for the most seriously injured to be evacuated overseas, while medical assistance continued and more victims were identified. Through physical and fiscal donations medical supplies and trained surgeons arrived, office equipment was attained to assist administration, and basic needs such as food, clothing and emergency shelter were provided. Grief and trauma counselling was established for victims, their families, and those affected by the bombing. Daily updates and briefings were also conducted in an attempt to keep everyone informed (BaliSOS 2004).

The bombing inflicted physical, emotional and economic damage

Not all recovery strategies in Kuta were necessarily compatible with immediate business and community priorities

As most of the immediate medical needs were met, official efforts began to focus on the clean up and restoration of vital functions of the community. While the Balinese and national authorities expressed sympathy and condolences, greater security was committed to provide reassurance to both residents and visitors to the island (Beratha 2002, Indo.com (b) 2002). The Indonesian police and military also began work with an international investigation team at the bomb site to try and ascertain the facts and trace potential suspects.

Despite overt government and regional attempts to restore stability, the majority of international tourists opted to leave Bali. Already personally distressed by the incident, locals and businesses in Kuta experienced an immediate decline in trade. Many of the devoutly religious Balinese turned to ritual and ceremony in an attempt to restore physical and spiritual harmony to the island and renew faith (Indo.com (a) 2002, Ballinger 2002). Several ceremonies, inviting participants from all religious denominations and nationalities, were held at the site to purify and cleanse it of all residual chaotic influences. Attracting dignitaries and media attention from around the world, Bali publicly displayed the level of grief and anxiety caused by the bombing.

While the scene was cleared of debris and reconstruction of the surrounding buildings initiated, tourist numbers continued to decrease. Business for most in the region became severely limited. Beyond the physical and emotional damage, the terrorist attack revealed the relative instability of the tourism industry and the vulnerability of those dependant on the revenue it generates.

Early issues and perceptions (3–4 months after the terrorist attacks)

As supplies, training and substantial funding continued to be offered through donors, disaster assistance focused on those identified as the direct victims of the bombing. The Bali Recovery Group and other administrators (2004) oversaw the provision of such support included medical treatment, financial aid, psychological counselling, food and accommodation. There was a high degree of consensus between government, NGOs, private enterprise and the local community that such assistance remained a relief priority. The majority of residents and businesses in Kuta and Bali however, had developed a strong reliance on tourism and associated economic and social impacts soon became the predominant issue.

Experience from other tourist-reliant destinations such as Luxor (Egypt), Israel and Turkey, indicated that the revival of the tourism industry after such acts of terrorism can be unpredictable. The research of Somnez et al (1999), Pizam and Mansfield (1996) identified short-term loss of investment confidence, declines in economic growth, and lower job creation are common symptoms of a destination in crisis. Associated economic, social and psychological impacts included unemployment, bankruptcies,

Revival of the tourism industry after disaster can be unpredictable

business closures, migration, increased social tension, pessimism, depression and changes in lifestyle. As such effects became more apparent in Bali, various stakeholders developed strategies aimed at industry and community recovery.

Reports (both official and unofficial), three months after the bombing indicated that many of these early recovery efforts achieved limited success. Examination of Indonesian statistics (BPS Statistics Indonesia 2004) reveal that direct foreign arrivals were down 30–40% on previous years and hotel occupancy rates had dropped below 40%. BaliSOS (2004), a local NGO, estimated that approximately 100,000 had already lost their jobs—most from the informal sector. Many businesses encouraged staff to take unpaid leave, scaled back working hours and reduced salaries in attempt to remain operational. Numerous closed and/or empty shops were testimony to those that failed.

Early findings presented to the Consultative Group of Indonesia (CGI 2003, World Bank 2003, Kalla 2003) claimed that most residents of Kuta were able to meet their basic needs through a variety of coping strategies and community solidarity (World Bank 2003, Kalla 2003). Such strategies included accessing savings, selling assets, and return migration to villages. Unfortunately, with limited resources these were considered short-term solutions. Increased competition for fewer jobs, and a growing blame and resentment towards Muslims, heightened social tensions. Despite the enhanced security, kidnapping, theft, elicit drug use, blackmail and other crimes affecting both residents and tourist were being committed. Local events involving illegal cockfighting and gambling became more abundant. Anecdotal evidence suggests that the island of Bali developed the highest per capita consumption of anti-depressants in Indonesia—with patients as young as 10 years old.

Despite such hardships, the majority of people in the community had tried to move beyond the shock and disbelief towards the resumption of a normal lifestyle. Streets remained full of traffic, shops and restaurants continued to open, and staff kept returning to their places of employment. Touting, particularly amongst the transport operators, had intensified yet most seemed resigned to the fact that prospective clientele would eventually come to them if their goods/services were required. The continued ingenuity and resilient attitude of locals was evident in t-shirts for sale conveying messages such as "Osama Don't Surf", "F**K Terrorists" and "Bali Loves Peace".

Early recovery responses require ingenuity and resilient attitudes of local people

Over the rubble of destroyed buildings on Legian Street many toursim businesses are rebuilt

While not prolific in number, foreign tourists were still evident at this time. Among the surfers, backpackers, budget travellers, Bali "faithful" and simply curious, were the many overseas business entrepreneurs seeking to benefit from a downturn in trade. Empty poolside bars, deserted restaurants and the early closing times of shops and entertainment venues however, clearly demonstrated how the nature of the Kuta had changed since October 12. There was a particularly noticeable absence of young Australians, rowdy party goers, and the "high spending" international package-deal travellers. More Indonesian tourists also visited the area, yet the activities and combined spending of all of these consumers were insufficient to make up the shortfall in prior income.

Beneath the warm smiles and willing conversations of the residents, a sadness and confusion seemed to prevail. Many had expressed difficulty in understanding foreign government advisories recommending people avoid their island, which had always been known for its ideology of peace and harmony. Approachable tourists were regularly asked to advise and assure everyone they met that Bali had once again become a safe place to visit. While trying to remain optimistic about the future, most locals were concerned with the daily realities of trying to find the money to feed families, send children to school, pay rent and simply cope.

Preliminary strategies—development and implementation

Official Indonesian government management strategies as reported by media during this period focused predominantly on improved national and regional security, the pursuit of justice and promotional campaigns (Kalla 2003, World Bank 2003). While the then proposed investment in local infrastructure projects such as water, drainage, sewage, and improved pavements would eventually prove beneficial to the residents of Kuta, such development plans were seen to do little to help alleviate the more immediate economic concerns. A series of social support programs addressing health, education and unemployment were also planned for the 'vulnerable' within the local community; however, few know if implementation ever followed.

Many of the initial recovery strategies were developed with the support and assistance of international governments and organisations such as the World Bank and USAid. While willing to co-ordinate with the Indonesian government, a large number of NGOs, volunteers, and donors chose to join the rapidly expanding Bali Recovery Group. The primary focus of this co-ordinating committee was to assist the effected Indonesians, including those economically impacted by loss of their livelihood (Bali Recovery Group 2004). Formally meeting on a monthly basis this group discussed new developments, relevant issues and summarised the progress of existing relief programs.

Despite the convictions and genuine intentions of the Bali Recovery Group, closer investigation reveals they were far from an integrated operational unit. Dominated by non-Indonesians with independent sources of sponsorship and funding, there appeared to be no uniform agenda for recovery—except to help. Many of the member organisations were also obliged to address the expectations of their donors as a priority. Initiated with minimal public consultation, projects often demonstrated limited consideration of existing issues of sustainable development, cross-cultural dynamics and understanding of the real needs and aspirations of the local community.

Lack of trust or familiarity, due to political, jurisdictional and/or personal disputes also resulted in suspicion

and poor communication among many participants. A seemingly valid proposal to establish a jointly funded co-ordination centre to operate as a centralised data collection and dissemination point was dismissed by the majority without further discussion or clarification. While unanimous decisions are rarely a political reality, the Bali Recovery Group seemed to lack the consensus for effective, efficient collaboration. In a country renowned for its corruption and misuse of public funds many organisations remained reluctant to offer full accountability and transparency (Karyadi 2003).

In spite of such shortcomings, the Bali Recovery Group still managed to play a vital role in the early disaster management process. In addition to providing a forum for dispersing information and raising awareness of certain issues, it also presented an opportunity to network with a diversity of people with a range of experience. Regular updates were provided by various subcommittees regarding the status of medical assistance, counselling, education, the environment and economic recovery. Many participant groups became actively and effectively involved in ensuring basic living standards were maintained and that unemployment and retraining concerns were appropriately addressed.

With typical human pride and resilience, most residents of Kuta and Bali preferred not to be seen as victims requiring and expecting aid. Many were oblivious to the money that was apparently raised on their behalf, or even where such funds may have been spent. Meaningful assistance at this grass roots community level would equate to the provision of economic and social security. Few of the reactive, short-term strategies implemented at this stage counted for significant medium and long-term effects, as the level of social vulnerability remained high.

Continued adversity and resilience

Over the passing days and months, media and public attention has been drawn to other issues in various parts of the world. Bali and its inhabitants have continued to readjust and generally persist with their daily lives. Recovery to pre-crisis conditions has remained elusive, as many of the initial measures used to manage have become less viable. Despite the obvious instability, tourism has remained at the core of the Balinese economy as the regional government, businesses and community members have each endeavoured to succeed within an increasingly competitive market—with varying results. As the extent of the crisis has become more apparent the priorities and issues for many stakeholders have also changed.

Tourism initiatives—recreating image

While the afflicted community and tourism industry of Bali have strived to move beyond the negative images and memories of the tragic Kuta bombings, hostilities

The Indonesian Government embarked on a number of activities to assure safety and security

in Iraq, the "global war against terrorism", and concerns regarding contagion of Sudden Acute Respiratory Syndrome (SARS) and the Avian (Bird) Flu have affected travel demand world-wide. Risk, whether real or perceived, remains a strong determinant in the decision making process of the travelling public. To re-establish itself as a popular tourist destination Bali has needed to regain consumer confidence.

The Indonesian Government embarked on a number of active strategies to emphasise and assure safety and security including;

- identifying and prosecuting the Bali Bombing suspects;
- strengthening international intelligence sharing arrangements;
- introducing new anti-terrorism laws; and
- increasing the highly visible police and security presence across Bali, particularly at seaports and airports (CGI 2003).

As countries like Holland and Japan eventually chose to relax or revoke their travel warnings the terrorist bombing of the J.W. Mariott Hotel in Jakarta, August 2003 undermined much international confidence. The continued tolerance of radical Islamic militant groups, regional instability in provinces such as Aceh and Ambon and an historically unpredictable political environment has meant that many foreign advisories regarding Indonesia have remained (Bali Update 2004).

International marketing and public relations firms were also employed by various organisations to assist in the promotion and restoration of a positive destination image for the area. Campaigns and slogans like *Bali for the World* and *Kuta Karnival of Life* were introduced to emphasise the rich natural and cultural assets of the island rather than simply offering details of the numerous tourist facilities and services available. Large scale events, such as the one year anniversary memorial, have been staged to draw favourable media attention. Bali Discovery Tours (Bali Update 2004) reports that local industry representatives have redoubled efforts in tourism trade

shows and exhibitions, as international journalists and travel agents have been invited to experience Bali first-hand (Bali Update 2004). Regardless of such promotions, the heavy concessions offered by airlines, hotels and tour operators appear to be the primary incentive in luring potential clientele back to Bali.

The recovery status (18 months after the terrorist attacks)

For the tourism industry, revitalisation and continuing growth in visitor numbers appears promising. Many airlines have rerouted or scheduled new flights to the island while hotels and businesses are experiencing renewed patronage. Direct foreign arrivals have reached unprecedented highs while occupancy rates are generally above 80% (BPS Statistics Indonesia 2004). Despite such recent instability, tourism for Bali has demonstrated a remarkable resilience. While such achievements are optimistic, closer investigation reveals that the social and economic crisis is not yet over for the community.

As Bali has become a more affordable destination, the type and quality of tourist has also changed. The traditional long-haul North American and European market segment has been well surpassed by domestic, Asian and budget Australian travellers with shorter visits and reduced daily expenditures (BPS Statistics Indonesia 2004, Bali Update 2004). Despite a revival in the number of revellers and young visitors, spending and behaviour patterns have yet to return to pre-crisis levels. Continued discounting and efforts to remain competitive have meant that many local businesses, families and individuals are still struggling financially.

Many of the social and victim support groups formed directly after the terrorist attacks in 2002 have now disbanded or moved on to sponsor other causes. The Bali Recovery Group has not formally met since August 2003, although various elements have continued to pursue issues of local health, education and the environment (Bali Recovery Group 2004, BaliSOS 2004). Without additional aid and government funding the majority of community co-ops are unable to provide further assistance. Employment remains limited and wages low. Families that haven't met their financial obligations are now facing the possibility of losing ancestral land used as security on bank loans. Sexual exploitation of locals, particularly prostitution and paedophilia, is reportedly on the rise. Despite a strong familial and community support network, most hope and pray for the return of their social and economic independence.

Rubbish on Kuta Beach adds health and hygiene to the list of tourist concerns

The local community takes the proactive initiative to "clean up" Kuta Beach

Kuta Beach 18 months after the bombing

Many of the devoutly religious Balinese turned to ritual and ceremony to restore physical and spiritual harmony to the island and renew faith

While the community still experiences negative impacts subsequent to the tragedy, life does continue. In the absence of viable long-term alternatives most remain reliant on tourism revenues. Whether attracted by the cheap deals available, or conducting a pilgrimage to the memorial and "Ground Zero", an obvious return in visitor numbers has helped reaffirm local commitment to the industry. An improvement in economic prospects for most has resulted in a comparable reduction in visible desperation. Predicted reprisals against Muslim residents did not eventuate as the level of social tension has drastically reduced. The incidence of public gambling has also decreased with more relaxed conversation and public commerce. Business still remains slow for many, particularly in the more remote tourist locations, yet they try to remain buoyant.

In such an atmosphere of optimistic uncertainty, tourism development continues almost unabated in Bali. Internet and telecommunication facilities catering predominantly to tourists are becoming more abundant. ATMs are prolific (secure cubicles are even air-conditioned), additional hotels and entertainment facilities have been created, and more travel/tour companies seem to be forming. Premises that have been vacated by lack of business or bankruptcy are soon re-occupied by other tenants. While local merchants and craft shops compete for profitable sales large multi-storey shopping centres have been erected to meet the tourist's every souvenir demand in a convenient, controlled and comfortable environment. Ownership and investment in these developments is rarely local.

Employment prospects for residents seem to be marginally improved. Security measures enforced post-bombing requiring non-residents to apply and be sponsored for a work permit has reduced migration to the island, and the competition for limited jobs. Although wages have not increased substantially, demand for services is once again increasing. As many locals have resorted to sharing rented shop space and/or homes with family and friends to reduce costs, it is apparent that the shared adversity has drawn the community closer. Such fellowship, whether out of necessity or voluntary, has been credited with a growth in public concern regarding regional health, poverty, education and environmental issues.

Unfortunately the amount of financial assistance available for sustainable options remains limited. Despite the influx of international interest and funds following the terrorist attacks, little has been achieved in terms of long-term resources and a universally available social safety net. Most residents that benefited from improved tourism must now repay debts or re-invest money in family and/or business. The local government has remained limited in both political influence and finances. Even as the economic and social statistics begin to reveal the flow-on effects of this crisis, the community remains susceptible to other contingencies.

Challenges and successes to integrated crisis management

While initial strategies developed after the terrorist attacks demonstrated a high degree of public consensus, political, economic and even personal differences soon worked to undermine the establishment of an effective, united partnership of stakeholders as recommended in the relevant literature. Despite the shared objective of recovery and greater resilience, government, businesses, NGOs and local community in Bali each seemed to have different concerns. Resultant crisis management plans, strategies and associated promotional campaigns have been eclectic and far from holistic.

As a direct consequence of the tragedy and subsequent foreign assistance, emergency procedures, equipment, training and medical facilities for the island have improved substantially—yet access still remains beyond the means of most residents. Of the various NGOs and agencies that responded to the situation, a number continue to operate within Bali, however associated projects have remained only nominally co-ordinated. Successful activities such as provincial poverty alleviation, educational support and environmental pollution control, have been difficult to replicate on a large scale due to limited resources (Parum Samigita Forum 2004, BaliSOS 2004).

Promotional efforts, security improvements and heavy discounting have helped to attract tourism back to Bali yet such tactics have created their own social and economic issues. In an environment of increased security checks, police and military personnel, both tourist and residents still profess to nervousness regarding the possibility of further attacks. Irrespective of such concerns, a return in revenues has meant that most residents continue to pursue tourist dollars rather than alternative, more sustainable sources of income. Additional efforts required to retain employment or stay competitive have generally had detrimental effects for family, business and finances. Despite the increase in public awareness, community participation in the formal decision-making process of most development on the island still remains minimal.

Perhaps the greatest obstacle to achieving recovery and systematic co-operation in Bali has been the existing economic and socio-political structure (Asian Market Research 2002). Synonymous with most developing nations, Indonesia demonstrates a high level of social vulnerability with inadequate public infrastructure and a negligible social security network. Development policies, particularly in relation to the tourism industry, often focus on economic returns with limited local participation or consideration of associated social and environmental impacts. Financing for additional resources and facilities that would ultimately benefit a community's resilience and capacity to recover from a disaster has generally been considered a low priority.

As a Hindu island in a predominantly Islamic nation, Bali also represents a complex political, cultural and ideological situation (Bali Update 2004). While local government organisations exist within a national framework, traditional laws and social structure have retained a popular significance. Jurisdictional problems, allegations of corruption, suspicion and minimal public consultation are common. Recent decentralisation of Indonesian government departments and responsibilities has created additional confusion and conflict. The controversial Visa-on-Arrival fee for most foreign tourists, introduced in February 2004 (and subsequent dispersal of funds collected), is continued evidence of the disparity that exists between the priorities of the Balinese and central Indonesian Government. With the most immediate and apparent conditions overcome it has been difficult to establish a co-ordinated, sustainable commitment to long-term capacity building measures at any level of Bali's recovery process.

Future directions

While Bali has yet to develop an effective integrated crisis management plan it is in the relatively rare position of possessing heightened community awareness and recent experience in surviving a large-scale disaster. Security, medical and emergency response upgrades implemented since have improved future capabilities for the island. The major impediments to achieving greater socio-economic resilience continue to be resources (human, material and financial), and open collaboration. As returning tourism revenues generate a renewed source of income for most, the opportunity exists to invest in personal education, retraining and family/business savings. Through progressive dialogue and networking, relevant stakeholders may be able to overcome their prejudices and commit both time and money into working together to protect the unique attributes and character of Bali.

It is a sad reflection of today's world that the island of Bali can never truly recover its pre-crisis "innocence", however in the aftermath of this tragedy lies the chance to realise a safer, more alert and more resilient community—the ultimate emergency management priority.

Acknowledgement

Post-script

The observations made in this article were based on research (secondary data), personal communications and volunteer experience conducted primarily in Kuta, mid-January to mid-February 2003, and May 2004.

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Government communication strategies for community recovery following the ACT Bushfires, January 2003

Beckenham and Nicholls examine a unique episode in government-community recovery communication in the aftermath of the 2003 Canberra bushfires

Abstract

On 18 January, 2003, a bushfire that swept over the ACT was responsible for four deaths and destroyed large areas of rural and suburban ACT, including more than 500 homes and other buildings. From the evening of 18 January, the ACT Government undertook an extensive response and recovery effort. A major part of this was to establish, maintain and improve communication between the ACT Government and the affected community to support recovery needs. This project, focusing on the recovery phase following the bushfire, examines a unique episode in government-community communication. It attempts to describe and evaluate the effectiveness of the ACT Government's communication initiatives, and proposes a preliminary model for government-community recovery communication.

The scope of the event

On 18 January, 2003, the ACT experienced what was later described as 'an unprecedented fire disaster' (Report of the Bushfire Recovery Taskforce, ACT October 2003, p. ix), causing the death of four people, the loss of 488 homes and some 90 community, commercial and rural buildings, and damage to many other homes and businesses, including rural properties to the west of Canberra (McLeod Report, 2003, p.iii).

As the report of the ACT Bushfire Recovery Taskforce later noted, practically all the bushland to the west and south of Canberra was burnt out, destroying about three quarters of the ACT pine plantations. There was severe fire damage to the Tidbinbilla Nature Reserve and Namadgi National Park, including all of the Cotter River water catchment. There was also significant damage to electricity, gas, water, sewerage and telephone services in the ACT. At one stage immediately after the fire storm, there was no electricity supply to some 50,000

ACT residents, and many people were without power and telephone for a week or more. The two major water suppliers into Canberra were temporarily non-operational, as was the sewage treatment plant.

Aside from structural damage, there were three other aspects identified by the ACT Government as requiring attention in the recovery process. These were the 'hit and miss' nature of the destruction pattern in suburban Canberra where there was a patchwork of destroyed properties alongside 'saved', although often damaged properties; severe losses of livelihood, stock and infrastructure for many rural families already badly drought-affected; and finally, apart from some serious physical injuries, many people experienced severe emotional problems.

From the evening of 18 January, the ACT Government began an extensive and complex response and recovery effort. A major part of this was to foster, maintain and enhance communication between the ACT Government and the affected community to address recovery needs of the ACT community. The Government's intention was 'to provide up-to-date, relevant and useful information to assist with the recovery process', (speech by Alan

Properties to Canberra's west bore the brunt of the firestorm

Volunteers help to restore gardens

Thompson, Chief Executive, ACT Bushfire Recovery Taskforce Secretariat, Emergency Management 2003 Conference, June 2003, Sydney). To this end, the ACT Bushfire Recovery Taskforce was set up on 24 January. On the same day, the ACT Bushfire Recovery Centre was established in premises at the Lyons Primary School in central Canberra. These two organisations played a major role in the wide range of communication activities conducted by the ACT Government in the months following the bushfire.

This article describes the organisational and management structure in relation to communication activities; the action plan devised and its implementation by elements of the structure; communication methods and vehicles; and the critical role played by the Community and Expert Reference Group and the ACT Bushfire Recovery Centre in terms of two-way communication. It gives an initial evaluation of recovery communication, and critiques the ACT Government's own evaluation of its efforts to communicate with the community in recovery. It seeks also to evaluate the effectiveness of the ACT authorities' response, and possibly to formulate a new theoretical proposition based on findings.

The project, begun in May 2003, spans the period from the establishment of the taskforce to the end of March 2004, when specific recovery activities ceased to operate out of the Recovery Centre, which closed. This article presents findings as at March 2004.

Literature review

Our research project began with the assumption that there would be a number of studies looking at disaster recovery communication. We proposed to compare what the ACT Government had done in its recovery communication with other practices.

The literature search undertaken indicates that there has been surprisingly little research into post-disaster recovery communication strategies or campaigns in Australia. Many studies looked at disaster and crisis communication needs both *before* (involving information about disaster preparedness) and *during* catastrophic events, as well as at re-establishing the infrastructure required for communication in the immediate aftermath of disaster (White 1997). There is considerable material written from the perspective of psychology, social psychology and cognitive theory. Some articles focus on affected individuals rather than on the community, such as work on disaster trauma.

There is also material examining risk communication looking at credibility issues in information on disaster preparedness.

One article on recovery information management (*Australian Journal of Emergency Management,* Vol 10, No 1, Autumn 1995, p.25) states that information management in disaster recovery is not only about providing the affected community with information about the availability of recovery services and plans, but is the basis for important social processes such as bonding between individuals, groups and communities. The article notes that the capacity of the community to participate in its own recovery is directly dependent

on communication of information. It presents ten information management principles that include:

- information needs to enhance the capacity of an affected community to manage its own recovery;
- information needs to be timely, factual and disseminated through a range of communication channels;
- information needs to be repeated frequently in the early stages following a disaster;
- information needs to change during the course of the recovery;
- information credibility is enhanced through delivery by a known credible person or organisation; and
- information management involves processes of gathering, processing and dissemination.

However, there appears to be a paucity of research in Australia into post-disaster recovery communication strategies and campaigns conducted by government authorities (at any level) to reach affected communities in the recovery phase following disaster, which is the focus of this research. The Victorian State Disaster Recovery Plan (*State Disaster Recovery Plan: Victoria* 1987) defines recovery in terms of a 'process by which a community is helped to return to its proper level of functioning after an emergency'. This publication was a response to the Ash Wednesday bushfires. It gives objectives and principles for recovery management, and goes on to say that recovery 'is an enabling and supportive process which allows individuals, families and communities to attain a proper level of functioning through the provision of information, specialist services and resources'. But there is no specific discussion of how government authorities should utilise communication channels to provide information.

Research framework

To establish the nature of recovery communication as employed by the ACT Government, a series of questions were devised relating not only to communication methods adopted, but also to the organisational structure and management developed to direct government-community communications.
The questions included:

- what communication channels, strategies and messages were utilised; and
- what kinds of response and feedback were sought and obtained from the affected community.

While responses to our questions provided material for a much larger research project than this article can cover, a significant finding was that the organisational

structure set up in the aftermath of the bushfire was crucial to the implementation of the government's communication strategy. The research focuses on this structure and its implications for communication.

Communication structure

The ACT Bushfire Recovery Taskforce, answerable directly to the Chief Minister of the ACT, was set up within days of the bushfire. Headed by Sandy Hollway, former Canberra resident, senior Commonwealth public servant and CEO of the Sydney Organising Committee for the 2000 Olympic Games, it consisted of five other prominent Canberra people representing the ACT community sector, ACT business, the ACT Government and the directly fire-affected community. The Taskforce was informed by a Community and Expert Reference Group (CERG) of 15 people representing a wide range of interested and affected groups in the community, including business, professional and trade organisations, unions, community groups and local politicians.[1]

The Taskforce and CERG were served by a Secretariat consisting of six functional areas. One of the functional areas was the Communications and Community Relations Group (CCRG), which was responsible for the communication effort. CERG's advice was channelled through the Taskforce to the Secretariat for action. The Secretariat was also able to call on all other ACT departmental agencies for support, and drew staff from all areas of the ACT public service during the intensive period in the first months after the bushfire.

Taskforce Action Plan

The Taskforce prepared a detailed action plan in February 2003 that described the structure, functions and action schedule of each operational part of the recovery response, including its public communication plan. The *ACT Bushfire Recovery Taskforce Action Plan* (ACT Government, 2003) stated the Taskforce's goals, naming key issues, planned activities, and their current

Sandy Hollway (centre) headed the CERG

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1 Members of the CERG included representatives from the Canberra Business Council, the Master Builders Association, Duffy Primary School Parents and Citizens Association, residents of Duffy and Chapman whose homes were destroyed, a rural lessee, the Weston Creek Community Council, the Institute of Architects, the ACT Division of the Planning Institute, Unions ACT, the Conservation Council and the ACT Council of Social Service.

status at the time of writing in February. In part it is against these aims that communication effectiveness is being assessed.

The operational responsibility for the CCRG was:

> Public information and media relations, co-ordination of intra-government communications for the Taskforce secretariat, management of the formal community business expert consultative process through the Community and Expert Reference Group. (*ACT Bushfire Recovery Taskforce Action Plan,* February, ACT Government, 2003, p.4)

The communication group was further charged with a number of responsibilities tied to key issues identified in the action plan.[2] Central to these responsibilities was the provision of 'up to date, relevant and useful information to assist with the recovery process'. (ACT Government 2003 pp.8–12). This was elaborated in the action plan under three issues. Briefly, the group recognised that:

- access to information was not only the right of all Canberrans during the recovery process but also crucial to the community's capacity to recover;
- different groups within the community would require different types and amounts of information; and
- information requirements would change.

Community Update *was considered the most important communicaton vehicle*

Finally, they recognised that the Taskforce would need to identify what needed to be communicated, to whom and when, and 'to develop information gathering, processing and dissemination channels.' The communication strategy was 'to include a continuously updated set of questions and answers so as to ensure relevant and consistent advice to the media and the public on emerging issues' (ACT Government 2003 p.12).

In February 2003, under 'current status', the CCRG reported that:

> The aim is an effective (not necessarily elaborate, expansive or 'slick') communications strategy which gets necessary information in a timely way to stakeholders and to the community. This is therefore to be seen as an integral operational part of the recovery effort, not public relations for its own sake or a mechanism to put 'spin' on issues. The Taskforce will contribute to wider communications strategies to reinforce community morale, spirit and pride in the ACT's response to the fires and confidence in the future (ACT Government 2003 p.13).

To this end, the group took on a number of tasks to:

- establish communication channels to facilitate information transfer both to and from the community, and between the Taskforce, Secretariat and the CERG;
- produce regular community news bulletins covering both specific topics of concern and broader community information;
- provide regular briefing on identified and emerging issues to the Taskforce, Secretariat, CERG, the Government and the public service; and
- facilitate the transfer within government and to the public of necessary technical and operational advice.

Communication methods and vehicles

The ACT Bushfire Recovery Taskforce, through the CCRG, used a number of channels of traditional media and a range of less conventional methods to convey the ACT Government's messages to the residents of Canberra and to receive feedback in the wake of the disaster. These included a weekly newsletter, radio announcements, regular advertisements in a number of ACT newspapers, a call centre, email and websites.

The weekly newsletter, *Community Update*, was delivered to all affected neighbourhoods, community centres, churches, and individuals and groups who asked to be on the mailing list. Copies were also available at the

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2 These included establishing 'direct links between the community and the Taskforce through mechanisms such as email links for community members to input issues and concerns'; ensuring 'the provision of clear information in relation to health and safety concerns and ways to manage possible risks'; ensuring 'a definitive statement about health matters to provide full and open advice to residents about risks and precautions'; providing practical information about the building system to enable people to choose whether to rebuild their homes or not; and ensuring 'that consumer protection issues are addressed through the involvement of the ACT authorities, the ACCC, the complaints mechanisms of the industry, and publication of trends in prices'.

Recovery Centre. The newsletter was available in both hard and soft (i.e. email) copy.

Newspaper advertisements included half-page advertisements in the Wednesday and Saturday editions of *The Canberra Times,* weekly full page advertisements in *The Chronicle* and fortnightly full page advertisements in the *Valley Voice* (both free local newspapers). Conventional public relations tools such as media releases, launches and events, news stories, and Community Billboard – a radio community announcement service – were also used.

CERG and the ACT Bushfire Recovery Centre

CERG and other key stakeholders met frequently with the Taskforce and members of the communications group. This provided regular feedback, contributing to knowledge of whether messages were received and understood, and indicated where messages needed to be adapted.

CERG proved to be a crucial organisational factor in the communication effort. This group was able to call on an extensive network of contacts, allowing a wide range of inputs and 'early warnings' to feed into the communication strategy and to steer and fine-tune the content of messages.[3]

As well as CERG's input, communication to and from the ACT community occurred daily on an informal basis via the Recovery Centre. Weekly meetings were held at the centre, which initiated a number of community activities in response to explicitly stated as well as perceived needs. These included organising short story and art competitions in schools, frequent meetings with affected residents, support for community barbecues and school sporting activities, and a Health Expo at a large shopping mall close to the fire-affected suburbs. The centre offered drop-in, and telephone and email enquiry facilities. It also hosted a series of public meetings at important time milestones, providing opportunities to hear and put questions to invited speakers with expertise in a number of areas, including recognised disaster trauma specialists.

Recovery Centre staff provided feedback from these encounters to the CCRG which then addressed newly realised communication needs with articles in *Community Update* and revised advertisement content. Recovery Centre management and staff had significant involvement in the commemorative event held on 18 January 2004 attended by approximately 3,000 people.

Rural villages and ACT farmers had special needs

Evaluating communication strategies

Our research looked at three forms of evaluation:

- focus group-based research commissioned by the ACT Government;
- narrative analysis of early community responses in letters to the editor in *The Canberra Times*; and
- the *Bushfire Recovery Taskforce Report,* published in October 2003.

To gauge support and demand for their recovery communication strategies and to assess their effectiveness for future government communication efforts, the Taskforce commissioned Market Attitude Research Services Pty Ltd (MARS) to run a series of focus groups in July 2003. Thirteen focus groups were conducted, comprising people whose houses were destroyed by the fires, people whose houses were damaged but still habitable, people living in fire-affected suburbs, and people from non-affected suburbs.

The MARS final report noted that, of all the communication strategies adopted by the Taskforce, participants were most unequivocal in their praise for the Recovery Centre. It was considered readily accessible, responsive, and rated highly by virtually all participants (Final Report: *Market Research to Evaluate Support for ACT Bushfire Recovery Taskforce Public Communications 11 July 2003,* 2003, Canberra).

Community Update was considered the most important and effective communication vehicle used by the Taskforce. Its format, presentation and community news style were highly rated. Content suggestions included more coverage of fire-affected areas outside the suburbs of Duffy and Chapman; and repeat articles on topics such as rebuilding issues, stress and depression indicators, and counselling, because the relevance of

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3 An example of CERG's input was its insistence that community concern regarding asbestos dust be dealt with. Although the ACT Health Department had assured the community that the risk was negligible, CERG reported high levels of anxiety about asbestos dust, so air measurement mechanisms were installed in affected suburbs which both proved public concern to be unjustified and demonstrated governmental willingness to listen to the community's fears.

such articles became apparent only some time after their original publication.

Taskforce advertisements in *The Canberra Times* and *The Chronicle* were also rated highly in terms of information, photographic content and graphic design. News articles about the recovery process in both newspapers were considered useful and deserving of continuing support.

The Canberra Connect telephone call centre was used heavily during the bushfires and highly rated, but was used less often in the recovery phase. The Canberra Connect recovery website was not well known and was infrequently used by participants from fire affected areas. It should be noted that participants also rarely used the soft copy *Community Update* (i.e. email) or the Recovery Centre email enquiry facility. The website and various other online information options were still considered useful resources as statistics gathered later by the Taskforce indicated the website was heavily accessed, particularly at the time of the fires and in the recovery period following (*Report of the Bushfire Recovery Taskforce, Australian Capital Territory* October 2003, p.80).

Participants were generally unaware of the role of CERG in the Taskforce communication strategies. However, CERG's activities were crucially important in facilitating two-way communication between the affected community and the ACT Government, and the value of recognition by the public for the work it did is a matter for debate.

Following the MARS research, the ACT Government agreed to and acted on a number of recommendations, detailed in the Taskforce Report.

Community response in *The Canberra Times*

Focus groups are useful for specific, directed questioning—allowing topic specific feedback from specific groups. They are a quick, relatively cheap research method widely accepted by social researchers. They are, however, very obtrusive and prone to many of the shortcomings of bias. In particular, group dynamics and participants' reactive responses, both to the moderator and the focus of the questions, can bias the data gathered through this method.

To triangulate the focus group data, a preliminary narrative analysis of letters to the editor of *The Canberra Times* was conducted. The paper is the regional daily broadsheet, and its correspondents are primarily from the Canberra region. Its letters page thus offered a geographically specific research population that included the same demographic groups as the MARS research.

Analysis has to date been conducted on letters about the fires and their aftermath from the period 20 January

Photo by The Canberra Times

Katy Gallagher MLA (l), member of the ACT Legislative Assembly with staff of the ACT Recovery Centre

2003 to 23 February 2003. References to government activities, agencies and communication channels during the recovery phase of the disaster were specifically noted and categorised as positive or negative in tone. During the period examined there were 203 letters about the fires.

There were few specific references to the communication methods and vehicles utilised by the Taskforce. Nine letters commented on media coverage, three of these published in the first week after the fire; two praising the local ABC radio coverage, and one thanking the staff of *The Canberra Times*. Given their proximity to the disaster event it may be concluded that these writers were referring to communication during the disaster rather than the Taskforce's recovery communication channels. A letter on January 26 was highly critical of the lack of coverage on Fox/Skytel television. The next specific reference to media channels occurred on January 31; two writers praising *The Canberra Times* coverage, and one specifically mentioning their web site. *The Canberra Times* coverage was praised again on February 6, and commercial local radio (2CA and 2CC) were praised by one writer on February 5. Although 'coverage' is a very broad term, the positive comments made by correspondents tend to support the focus group findings that Taskforce communication via *The Canberra Times* was rated highly.

There were two specific references to call centres, the first on January 24, praising operators at the police and evacuation centre enquiry lines, and another on January 29 praising volunteers at call centres. Another correspondent on February 1 thanked 'all involved' including those who were 'informing the community' and several writers thanked 'service organisations', 'behind the scenes workers', 'volunteers' and 'those behind the front line'. While these generic descriptions do not offer the same level of specificity as the focus group data, they do suggest a general view that ongoing recovery activities were perceived as useful and valuable.

A striking aspect of the correspondence analysed was the number of positive references to the ACT Chief Minister, Jon Stanhope. He was specifically

mentioned by 12 correspondents, always in glowing terms being praised for exemplary leadership and behaviour and being compared by one correspondent to Mayor Guiliani of New York. No correspondence was critical of his performance. It is reasonable to assume that the expressed satisfaction with Jon Stanhope indicates a level of satisfaction with the performance of government as well.

Further work is required to analyse community responses to government communication initiatives, especially in relation to electronic media. However, our survey of initial responses tends to support the MARS focus group findings.

Taskforce Report

In October 2003, the Bushfire Recovery Taskforce published a substantial report on the entire recovery effort. Chapter ten of this report deals with the communication strategy, showing how it evolved, how community feedback produced changes in media use, emphasis or content of messages, and provides an assessment of overall effectiveness.

While it would be unrealistic to expect a government report describing its own activities to be particularly self-critical, the report does provide some valuable insights into the lessons learnt.

The report notes that more comprehensive and timely information was needed by the community, particularly in the early phase of recovery, through as many different channels as possible. Information should not only give details about the situation but should also tell people what is being done to assist them. In addition, the need to repeat information in newspaper articles and advertisements was recognised as important.

The report also summarises findings from the MARS research, and outlines plans to use the 'heightened level of awareness' in the community and the 'high level of knowledge' in the government to plan future responses (*Report of the Bushfire Recovery Taskforce, Australian Capital Territory* October 2003, p.82). One result of this is the development of a new public information sub-plan for inclusion in an updated *ACT Emergency Management Plan.* The original plan contained minimal content regarding communication between affected communities and government emergency authorities, a flaw shared by many emergency management plans.

The report notes that an effective communication strategy in the recovery phase requires substantial resources, but that networks and resources activated during the emergency response can continue to be used in recovery.

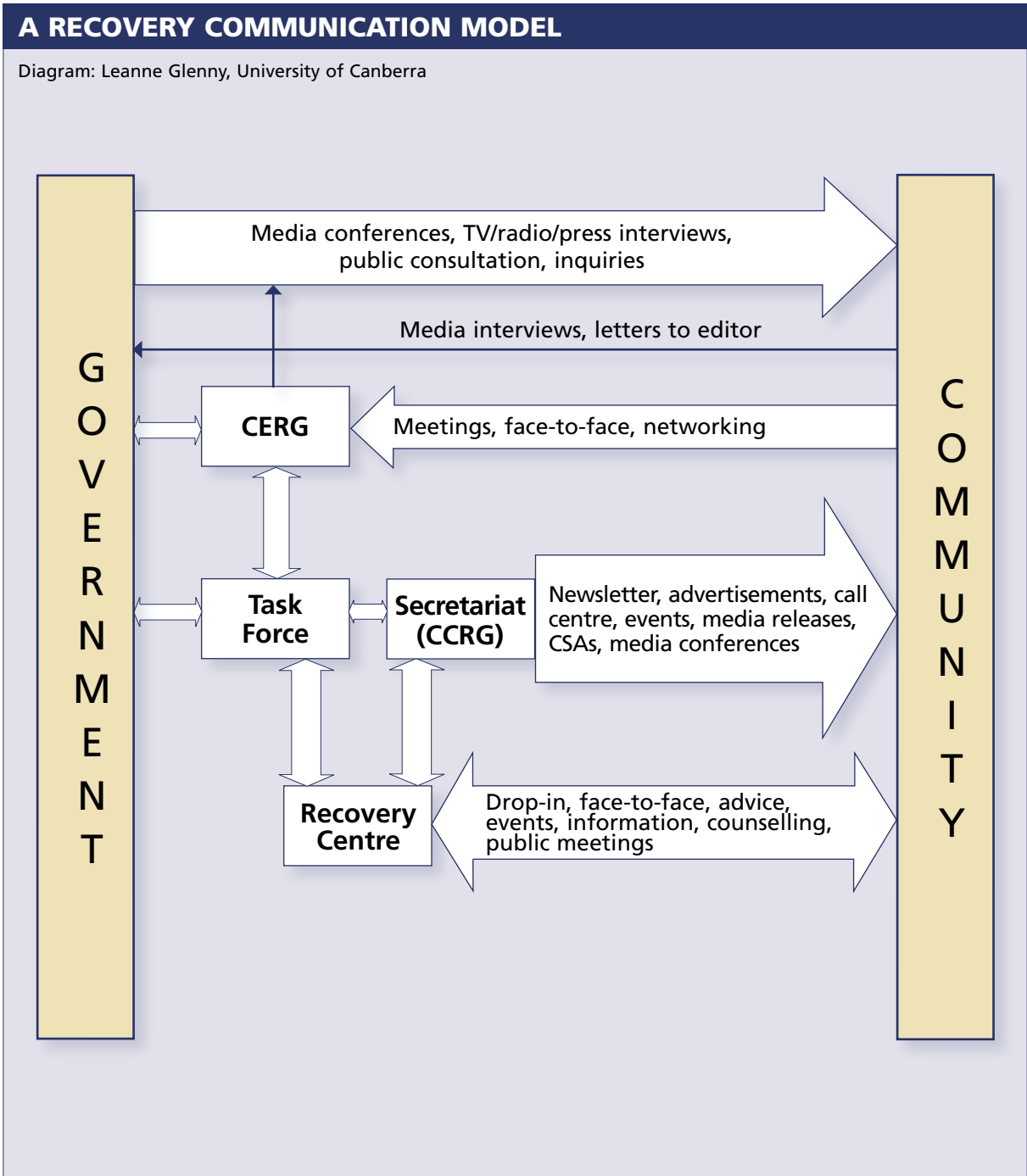Concluding, the report states: 'The need for community information before, during and after any emergency should never be underestimated. … During the recovery phase a comprehensive communication strategy … is essential.' (*Report of the Bushfire Recovery Taskforce, Australian Capital Territory* October 2003, p.83).

Conclusion

From this preliminary research, it appears that the ACT Government's communication campaign in the recovery following the bushfire was very successful in most respects. In addition to using the mainstream media vehicles for getting messages across – including media releases, public meetings, events, community announcements, community newsletter, electronic/digital information provision etc – the Taskforce also developed organisational structures, namely CERG and the Recovery Centre that were highly conducive to collecting responses from the affected community. This information was fed into the communication campaign, keeping communication up to date, relevant and specific to identified needs. Communication needs expressed during the focus group research, such as repetition of information, were addressed.

There is evidence from the focus group results that particular groups within the fire affected community, for example, residents of ACT rural villages and ACT farmers, felt they were not properly recognised in the Government's communication efforts. They felt they were a discrete group with differing communication needs and these needs were not met. In addition to rural communities, there were also a number of suburbs other than Duffy and Chapman where houses and property were destroyed or severely damaged. Some residents of these suburbs felt that Government messages were focused entirely on Duffy and Chapman and not directed to them.

However, as a model for post-disaster recovery communication between a government and its community, our research suggests that the ACT Government's response may serve as a best-practice model. In particular, the entire administrative structure set up in the immediate aftermath of the disaster laid the ground rules for highly effective two-way communication. This structure was innovative and broad-based, using established social and business networks as well as person-to-person communication through the Recovery Centre. In addition, community feedback received through this structure was acted on swiftly in the classical methods of issues management. To illustrate this process, we have developed a diagrammatic model of this communication structure (see following page) incorporating the main communication mechanisms and showing how two-way communication was fostered and acted on during the recovery period. This model shows how, following disaster, structures can be established to mediate communication between a government and its community, to operate in a two-way symmetrical feedback system (Grunig 1992) allowing messages to be

A RECOVERY COMMUNICATION MODEL

Diagram: Leanne Glenny, University of Canberra

GOVERNMENT

Media conferences, TV/radio/press interviews, public consultation, inquiries

Media interviews, letters to editor

CERG

Meetings, face-to-face, networking

Task Force

Secretariat (CCRG)

Newsletter, advertisements, call centre, events, media releases, CSAs, media conferences

Recovery Centre

Drop-in, face-to-face, advice, events, information, counselling, public meetings

COMMUNITY

adapted and government activities modified or changed according to community response.

Ongoing research directions

Further analysis of *Community Update,* and also how the electronic media served the aims of the government's communication strategy during recovery, will be a focus of ongoing research into recovery communication in the ACT. As well, the response of the ACT community to the scaling down of the government's recovery initiatives requires analysis. Such an assessment may further indicate to what extent, if any, government

communication activities play a part in the community's resilience and capacity to 'move on'.

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Fire research and policy priorities: insights from the 2003 national fire forum

Dovers, Cary and Lindenmayer define some key issues for future bushfire research and policy

Introduction

In February 2003, The Australian National University hosted a long-planned national fire forum aimed at bringing bushfire research and policy closer together (Cary et al 2003). The meeting was intentionally cross-disciplinary, and was the first time the full range of relevant natural and social sciences had been brought together with policy makers and managers. It was perceived that for too long, discussions of fire have been contained among separate groups organised around disciplines or specific management concerns, and subsequently the potential of cross-discipline and cross-sector discussions had not been realized.

The meeting was originally planned as a small, focused meeting of researchers and agency representatives. However, in the aftermath of the devastating January 2003 fires in Canberra and nearby high country a month earlier, the event grew to a large public conference. At a time of considerable stress for many involved, the event was marked by vigorous yet civilised discussion, and by the presentation and development of useful ideas and directions for research and policy. This contrasted with the debate in the media at that time and since. As well as reflecting the personal and professional qualities of those who attended, this positive tone was enhanced by the fact that papers and discussants came from a range of professions and natural and social science disciplines, mostly concerned directly with fire but from other risk and natural resource domains as well. That diversity of inputs demonstrated clearly that no one perspective can make sense of the complex phenomenon of fire or recommend singular policy and management responses across varied landscapes.

Communication among diverse interests is important, especially given the consolidation of fire research enabled by the establishment in 2003 of the Bushfire Cooperative Research Centre. The papers presented at the forum, along with panel responses and summaries of discussions, are presented in Cary et al (2003). Drawing on insights from the forum, this article defines some key issues for future bushfire research and policy in Australia, structured within five themes: ecology and environment; fire behaviour and fire regime science; people and property; policy, institutional and legal settings; and fire and Indigenous land management.

As well as identifying particular issues, the article conveys a central message—despite valuable existing knowledge and skills, our ability to live with fire in an ecologically and socially sustainable way is severely hampered by persistent knowledge gaps. A key issue is the lack of integration of knowledge from different policy sectors, disciplines and cultures. Closer links between Indigenous and non-Indigenous cultures, natural and social sciences, and emergency management, natural resource management and other relevant policy sectors are considered critical.

Ecology and environment

In contrast with perceptions of many people and the media, particularly in south-eastern Australia, who consider fire as an occasional catastrophic event which remains briefly in the memory, fire is an integral part of most Australian ecosystems, varying in space and time. A key concept in all aspects of fire behaviour, management and policy is the fire regime (Gill 1975) – the often complex sequence of fires in an area over time – and its components – fire type, frequency, intensity and seasonality. Fire regimes are influenced by many drivers including climate and landscape factors such as vegetation type, slope and aspect. Human influences on fire regimes are driven, in part, by human value systems and the activities and land uses determined by those values. One component of those human activities are purposeful fire management activities, but as Gill and Bradstock (2003) note "…extent to which fire regimes can be controlled or imposed by people is largely unknown".

An important future direction in fire management and policy is to develop a national program to identify and map fire regimes in Australia (Gill and Bradstock 2003)—a process perhaps with some broad similarities to the National Forest Inventory orchestrated by the Australian Government in partnership with the States and Territories. Such a program would have strong and long-term implications for all aspects of fire science, including fire threat analysis, calculation of greenhouse gas emissions, understanding the response and conservation of biota, and providing data for the validation of landscape-fire vegetation models (Cary and Bradstock 2003; Krebs 2003). The current absence

Knowledge and research is still insufficient to confidently predict fire behaviour

of such a national program is consistent with the poor and patchy state of basic monitoring of many aspects of natural resource management, not only fire management and its impacts (Dovers 2001). This is a significant challenge, and one that brings fire management into line with other domains of natural resource management in the sense that a major aim must be to identify ecologically sustainable fire management regimes just as, for example, overarching goals in the forestry and water sectors have incorporated ecologically sustainable forest and water management, respectively. However, there has been a poor record of cross-sectoral learning in resource management in Australia, which begs the identification and linking of "cognate policy sectors" such as emergency management, natural resource management, public health and community and regional development where problems with similar attributes are routinely encountered (Dovers 2003).

Given the lack of such fire regime mapping and associated environmental monitoring, together with the limited knowledge of the ability of humans to control or impose fire regimes, it is important that activities associated with fire regime manipulation, such as prescribed burning for fuel reduction, be sensitively designed and applied, and thoroughly documented. For example, not all areas of target landscapes should be burned at the same frequency and intensity (Gill and Bradstock 2003). Varying fire intensities and fire intervals, and examining key aspects of ecological response, provide critical opportunities for large-scale "natural experiments" (*sensu* Walters and Holling, 1990)

to investigate and become better informed about the most and least appropriate ways forward in the complex arena of fire management (Bowman 2003). This approach of "adaptive management" organised around structured experiment and learning, is alluring, but the requirements of information, organisational support and persistence should not be underestimated (Dovers and Mobbs 1997).

Although climatic conditions are key drivers of fire regimes in Australian landscapes, and future climate changes are likely to have significant impacts on fire regimes (Cary 2002), one of the major impediments to better forecasting fires is scaling of climate models (Lindesay 2003). Global climate models are necessarily "coarse" and it is difficult to downscale results to produce regional scale climate models that can inform fire management (Mackey et al., 2002). This requires urgent attention as finer scales are of greatest relevance to fire management.

Finally, a problem in dealing with the complex issues associated with fire management is the influence of the different value systems and knowledge bases of scientists, policy-makers, commercial interests, media commentators and affected communities involved in fire debates. For example, those largely concerned with fire suppression might view the structural and floristic composition of forests, woodlands and other vegetation types in terms of "fuel" for fires (Bowman 2003). That fuel is also a crucial variable in the performance of catchments to deliver sufficient quality and quantity of water. From a biodiversity conservation perspective such

fuel (eg. structural attributes such as dead trees, large logs and litter beds on the forest floor) are habitat for wildlife (Gibbons and Lindenmayer, 2002, Lindenmayer et al., 2002). From a fire suppression perspective, fence-lines and buildings are assets. These are also regarded as assets by ecologists, but plants and animals are also considered to be assets worth protecting. Throughout the broader community, perceptions and definitions of 'assets' are highly variable, including these and other aspects.

A key challenge in fire research and policy is to identify ways to resolve such differing but equally legitimate perspectives. This will help find common ground and "mature" the debate to levels that facilitate better informed policy development and decision-making. Constructive public debate is sometimes difficult to achieve in Australia and can be undermined through populist politics, vested interests of public or private organisations, and the simplistic, adversarial character of modern media (Dovers 2003). These represent serious challenges to achieving the complex trade-offs that will be part of attempts to identify ecologically sustainable fire management strategies.

Fire behaviour and fire regime science

Much fire science seeks to develop understanding of, and improved models for, fire behaviour at a range of spatial scales (Andrew and Queen 2001). Primary models link interacting variables including fuel, weather and terrain, and provide insights into fire spread, fire intensity, fire spotting and fire fighter safety. Secondary models address fire effects, evaluation of alternate management strategies and air quality. Tertiary fire

models address landscape fire regimes, social issues, and fire management models, amongst other issues.

Fire regime science encompasses a broad range of research into the sensitivity of fire regimes (frequency, intensity, season and type of fire – Gill 1975) to factors including management interventions, variation in fuel, weather and ignition characteristics that arise from different geographical locations, and climate change. The ecological importance of fire regimes is discussed elsewhere (Gill and Bradstock 2003, Bowman 2003, Bradstock et al. 2002).

Fire behaviour and fire regimes science relies heavily on modeling including, in the case of fire regimes science, simulation modeling. Experts disagree on which processes represent the key to modeling fire behaviour but agree that there are still limitations on basic scientific knowledge and input data. For example, Weber (2003) highlights the importance of the dynamics of moisture in fuel particles during the passage of bushfire, a mechanism not included in current fire behaviour models. Lindenmayer (2003) argues that the conventional notion of a straightforward relationship between fuel loading and fire behaviour should be challenged. Gould (2003) argues that lack of knowledge on spatial variability of fuel quantity and structure and limited ability to predict local weather remain a constraint to fire behaviour prediction. Understanding gained through research and experience to date notwithstanding, knowledge in these areas is insufficient to confidently predict fire behaviour across a broad range of vegetation types. Resolving the relative importance of basic physical mechanisms that underpin fire behaviour and vegetation response remains a high

Fire is an integral part of most Australian ecosystems

Photo by Dianne Thompson

priority. Equally important is communication of knowledge across different areas of research, policy and management, and community stakeholders.

The role of modeling is contentious in fire behaviour and fire regime science, particularly for increasingly complex simulation models, as it is in many other areas of research. Some experts argue that models have contributed little to the understanding of ecological phenomena, and that modelers, while recognising the limitations of their models, continue to produce contingent results that nonetheless influence policy decisions (Krebs 2003). Others argue that models provide valuable and otherwise unattainable insights into phenomena like spatial patterns of fire regimes and their sensitivity to management that can only be studied empirically over very long time-frames (Cary and Bradstock 2003), or the sensitivity of fire regimes to climate change that cannot by definition be studied empirically (Cary 2002). There is agreement that these represent important research areas for which we urgently require greater insights. Modeling will provide insights into possible implications of manipulating different variables in a landscape over time (Bartlett 2003), including the efficacy of varying levels of prescribed burning at the landscape scale (Cary 2003), in the short term, and can provide hypotheses that can be tested with surveys of managed systems and long-term monitoring, but will not provide all of the answers that fire managers require.

Irrespective of whether simulation or empirical approaches are preferred, modeling and data collection in the absence of theory may be unproductive. Weber (2003) argues for a greater theoretical emphasis in researching fire behaviour. There has been considerable research into spatial variation of fire regimes and the processes that drive them, but there is no comprehensive theory to explain spatio-temporal variation in fire frequency, intensity, season and type that comprise fire regimes. Developing theory describing fire regime phenomena remains an outstanding challenge. Appropriate theory will assist in overcoming the issue of scaling which represents one of the biggest challenges facing fire behaviour/regime scientists. Scientists study fire behaviour at the laboratory and plot scale. However, the ability to scale understanding to fires with intensities beyond that feasible for experimentation, and to broader spatial scales relevant for landscapes, remains elusive. Important scaling issues include the involvement of complex fuel structures and the way they are integrated by larger scale fires, and the interaction between the convection column of a fire and the ambient wind field. Incorporating fire behaviour knowledge into landscape-level fire-regime simulators provides challenges of a similar magnitude. Long-term monitoring of wildfire behaviour (Gould 2003) and accurate mapping of all fires in a national spatial fire database (Gill and Bradstock 2003) are the only means by which models of

Fire retardation qualities are not well incorporated into building and planning practices

high intensity fires and of fire regimes can be validated. This would require considerable resources.

As with the use of models in other arenas such as biodiversity conservation (eg. Lindenmayer et al., 2003), it is not a case of whether modeling or empirical studies are the best, but rather that both are necessary. Empirical data are needed to parameterise models, and models are needed for prediction and hypothesis generation to inform empirical research. The key is that researchers engaged in both modeling and empirical research recognise the value of working together and be more aware of the strengths and limitations of their respective fields.

A final challenge is the incorporation of findings into policy. This requires that research be relevant, timely and generally applicable across a range of specific management locations (Gould 2003). Policy and management imperatives might prompt the release of findings before they are adequately tested or properly peer-reviewed. Increasingly, the commercialisation of Australian research can limit the wider communication of research findings (eg. commercial-in-confidence). There is also the danger of the findings of location-specific research being unwisely extrapolated to other landscapes via "one-size-fits-all" policy and management prescriptions. There is arguably a case for more clearly labeling research findings according to their empirical basis, state of completeness, validation and publication

Policy planning and management needs to translate to on-the-ground activities

in non-refereed and peer-reviewed literature (Funtowicz and Ravetz 1990). This would enable policy-makers, managers and researchers alike to ascertain the level of confidence that they can place on research findings.

People and property

Clearly, our understanding of fire and the efficacy of different management responses to threats to people and property posed by fire could be improved, but there are also inadequacies in terms of co-ordination and integration of knowledge and experiences across domains. Also, usable knowledge may exist but not be incorporated in policy and management. For example, Leonard (2003) points out the uncertainties associated with different house designs and materials in terms of fire retardation qualities. Nevertheless, what is already known about designs and materials is insufficiently incorporated into personal behaviours, building practices and regulations, and planning codes. Relevant standards do not reflect available technical knowledge, arguably because of the influence of vested interests, which indicates not only an area for more vigorous policy development, but also for better connection between research and policy. The issue of the adequacy of implementation and the related one of evaluation of policy and management interventions to identify implementation patterns recur across many aspects of fire policy.

The failure to monitor, evaluate and learn from policy experiments may result from inadequate resources in agencies, reluctance to engage in evaluations,

lack of appropriate skills or poor communication. Policy learning and the application of lessons must involve increased sophistication of understanding and recognition of different implementation contexts rather than simple mimicry (May 1992).

These questions arise in the context of technical and scientific knowledge, but also in the less well-attended area of social science research. Rohrmann (2003) identifies the important roles that socio-psychological perspective can play in understanding people's complex perceptions of and responses to risk. However, it is apparent that such knowledge is, on the one hand, imperfect and requiring better development and, on the other, poorly appreciated by other disciplines and professions. As both communication and community-based management responses are widely accepted as important, socio-psychological research and its application are crucial. To think otherwise is akin to claiming that fire science and fire ecology are irrelevant to understanding fire behaviour and the role of fire in the landscape.

The incorporation of socio-psychological research into fire policy and management emphasises the importance of developing processes and incentives for improving integrative and interdisciplinary research and its connection with policy and management. This applies to the integration of different natural science perspectives on fire (eg. fire behaviour, fire ecology, climatology), the integration between social science domains (eg. policy evaluation, psychology, law), and most difficult of all, across the natural-social science divide. There is a role for the humanities as well, such as for ethicists to inform

discussions over the balance between controlling nature or controlling human behaviour, or environmental historians in contributing knowledge of past fire events and responses to them (on the latter, see Dovers 2000). Centuries of specialisation in disciplines, research organisations and professions, and across government portfolios, weigh against such integration: however, fire research is not alone in requiring such a shift which is also a priority in, for example, resource and environmental management.

There is agreement that community-based policy and management options can be effective and will be increasingly relied upon (Rohrmann 2003, Bradstock 2003, Wilson 2003). However, communities are complex and the unthinking transfer of a model of community involvement from one context to another is unlikely to be advisable—just as transfer of fire suppression practices from one vegetation type to another is. It is only recently that knowledge of the nature of communities and the dynamics of information and informal social institutions within them has been valued, and this is a priority area for research. Another priority is rigorous, sustained evaluation of community-based programs to provide a more solid basis for future program development and implementation. Such research should be soundly informed by accumulated knowledge in areas such as program evaluation, deliberative methods, risk communication and risk psychology, rather than undertaken by managers or researchers not skilled in these areas. Only recently have organisational arrangements to encourage incorporation of social science research into the wider body of fire research and policy emerged—the for example the Risk and Community Safety Research Initiative established by Emergency Management Australia and The Australian National and RMIT Universities in 2001 and within the Bushfire Cooperative Research Centre (2003).

In terms of evaluation, particularly of community-based programs, the range of experiences and knowledge can be expanded by considering areas other than fire (Rohrmann 2003, Wilson 2003). This includes other areas within risk and emergency management, but also from areas such as crime prevention and natural resource management (Dovers 1998). To do this, connection between these research and policy domains will have to be built, with an awareness that policy learning in complex policy domains such as fire will be dependent on recognition of policy interventions as mixes of interdependent policy instruments operating within dynamic institutional systems (Connor and Dovers 2004).

To connect different research perspectives and to enable constructive policy debates, common bases for discussion are needed. Proper evaluation of different management interventions is one such basis, if the results are widely available. Another basis is conceptual models of fire risk such as the D=I.S.E.G.H.[1] model presented by Bradstock (2003). Such models can provide clarity in debates over what the key variables are, even if we cannot yet (or ever) be precise in a quantitative sense about the relative contribution of a particular variable. Indeed, by allowing identification and discussion of such uncertainties, such models allow more constructive research planning and even policy development, by enforcing a degree of rigor and consistency between participants in what are often discordant debates.

A clear message from Bradstock's (2003) model, and indeed from much other work, is that multiple strategies are required to manage human-fire interactions, and moreover that the optimal mix of strategies will change across time and place. However, optimal co-ordination between different aspects of fire policy is rare. Improving capacities to identify, implement, evaluate and continually improve those strategies should be a high priority, presenting challenges for managers and policy makers, but also for researchers if they wish to inform policy and management. The challenge does not only confront those concerned with fire, but other areas of risk and hazard, and in resource and environmental management where it is increasingly accepted that variable mixes of policy instruments (eg. regulatory, educative, market-based, etc) are required far more often than singular responses.

Policy, institutional and legal arrangements

Policy, institutional and legal arrangements for fire research and management policy should reflect the nature of the issues faced. Yet consideration of the nature of fire in the landscape and the multiple interacting dimensions of responses to fire suggests that we a far from this ideal. Studies of fire behaviour and the dynamics of fire in Australian landscapes and ecosystems highlight complexity and uncertainty, and multiple variables that are of differing importance across space and time (Bradstock et al 2002). As Tarrant (2003) states, fire represents a complex policy problem. That is because fire is a complex biophysical phenomenon: connectivity characterises fire and should characterise our policy, institutional and legal settings (Wasson 2003). Handmer (2003) emphasises the complexity – and ambiguities and uncertainties – inherent in the institutional landscape, as well as

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1 D (adverse risk to people and property) = I (ignition in the landscape) x S (fire reaching the urban interface) x E (encroachment into built environment) x G (fire propagation within the built environment) x H (fire propagation within buildings).

the unfortunate segregation of policy functions in the face of highly connected biophysical and human variables. That emphasises important areas of applied research and policy development. One is R&D and policy to enable optimal (or at least not dysfunctional) organisational structures to connect various aspects of fire management, that are effective and efficient and discourage unwise reliance on or ignorance of other elements or strategies. Whole-of-government arrangements and responses represent a major challenge, typified by tensions between the roles and mandates of large land managers (eg. forest or parks services, farmers), policy agencies, and fire and other emergency services, before, during and after fire events.

Handmer (2003) and Tarrant (2003) identify the fragmentation of research as well as of policy, but also recent trends in emergency management that may allow some improvement. These trends, such as from individual to shared decision-making, and from reliance on protection by agencies to community coping, are recent and demand ongoing research and policy developments. These trends also expose important issues between collective and individual responses and responsibilities, and Cheney (2003) among others highlights the dangers of a more litigious future. Henri (2003) highlights the key role insurance and under-insurance plays as an individual response but also in financing collective responses. The recurrence of confused debates over the role of insurance (or lack of it) after major fire events suggests that better communication of the role of insurance is required (a similar situation occurs in the case of floods, Smith et al 2002).

There is also the question of whether increasing reliance on community preparedness has been coincident with deskilling and diminishing of government services following Australian public sector reforms in recent times. Reliance on community-based programs begs close attention to the design and support of those programs, and to the interaction between various volunteer programs and between these and agencies and other programs (such as research, planning, house design changes, etc). In regional areas with proud histories of volunteerism (fire brigades, SES, etc), ever greater reliance is being placed on volunteerism not only with respect to fire, but to many other policy areas as well, such as community health, environmental and land management, crime prevention, etc (this issue is discussed by Handmer et al 2004). The limits of volunteerism need to be considered across policy sectors (for reviews of similar issues in the natural resources sector, see Curtis 2003; Dore et al 2003). More specifically, the co-ordination and integration of different risk management activities at community level, or at least the avoidance of confusion and tension between them, is emerging as an important research and policy concern.

Indigenous land management

Discussions around the themes of environment and fire behaviour stress the impossibility of fire-proofing Australia, and this is emphasised again with respect to Indigenous land management. Some contend that by using Indigenous fire management as a guide, the impacts of fires may be reduced – although wildfires will not be prevented. Indeed, from an evolutionary perspective, Bowman (2003) argued that through the long biogeographical history of fire in Australia, one of the great triumphs of the Pleistocene Australians was the taming of wildfires through the development of "igniculture". Clearly there are some lessons here for modern Australian society in learning to live with, rather than only fight against fire (Bowman 2003; Baker 2003; Liddle 2003).

The development of igniculture by early Indigenous Australians would not have been without impacts on vegetation or associated wildlife over early millennia. It is likely that these fire regimes would have had negative effects on species dependent on long-unburned fire refugia (like leaf-eating kangaroos) and probably contributed to their extinction. Notably, the cessation of Indigenous fire regimes following white occupation also may have disadvantaged a range of species – and as hypothesized by Bowman (2003), the "tamed fire regimes" developed by indigenous people then became "feral" after European settlement. Re-taming fire will be a major challenge to land managers given the extent of infrastructure that now characterises many landscapes – including at the ever-expanding bushland-urban interface where fire management poses particular logistical, human health and other problems. Indeed, fire (and attempts to control or prevent high-intensity conflagrations) is attracting increasing public interest and conflict between interests because there is an ongoing expansion of settlements adjacent to fire-prone native vegetation (Whelan 2002).

Despite these challenges, it is clear that major insights into fire management can be gained from examining approaches developed over many millennia by Indigenous Australians. This is a key area of research and policy development (Whelan 2003). These approaches will vary between vegetation types, landscapes and regions and there will not be a single strategy that can be applied in all places. Indigenous fire management is not a 'recipe book' but rather an ethos of understanding, respecting, and living with the environment (Baker 2003; Bowman 2003; Hill 2003; Whelan 2003).

The capacity for knowledge exchange about fire management between Indigenous and white Australians, while important in both theory and practice (Burrows 2003), is limited. First, it is critical to recognise that scientific and Indigenous knowledge systems have much in common (Baker 2003), overlap considerably,

and should not be seen as mutually exclusive (Whelan 2003). This is an important point as traditional knowledge has often been trivialised by western science even though the former has the ultimate "peer-review" process (Indigenous people's lives depend on getting fire management right—Baker 2003). Second, it is clear that from an indigenous perspective, there are great sensitivities associated with both ensuring that indigenous knowledge is passed on by the "right people to other right people", and how knowledge is stored and who has access to it. These are issues that must be dealt with cultural sensitivity and approaches to cross-cultural communication (such as the "bridging tools" proposed by Hill 2003) remain as a major future area for research.

Despite the problems inherent in cross-cultural communication, maintaining indigenous knowledge of fire management is nevertheless essential not only for the maintenance of aboriginal culture and social cohesion (Davis 2003), but for the ongoing management of indigenous lands, and to allow white Australians to learn from this (Burrows 2003). Indigenous communities need to be provided with the tools and supporting mechanisms to not only maintain and protect such knowledge but also to implement it on the ground as part of managing their country and demonstrating the value of such approaches in practical ways (Hill 2003).

Conclusion

Fire is a fundamental component of Australian landscapes and always will be. It is not possible to fire-proof Australia, although it may be possible to reduce the impacts of some (although probably not all) fires. Given the pervasive nature of fire in this continent, it is clear that attention paid to it in terms of research and associated funding has in the past been inadequate. There are too few fire scientists, fire policy specialists, experts in cross-cultural fire knowledge, and others with expertise in fire, such as those with interests in:

(1) relationships between fire and the Australian biota;
(2) how and why fire regimes vary across space and time;
(3) legal and institutional frameworks that relate to fire management; and
(4) fire risk assessment and emergency management response.

The national fire forum from which this paper developed (Cary et al 2003) made it clear that linking and integrating insights from different disciplines and professions is an added and important challenge. It is time for the nation to address these important deficiencies, rather than continue the tradition of letting fire slip from the public and research memory within a few years of each major fire event. The crucial task of identifying ecologically sustainable fire management policies and practices that are consistent

Fire is a fundamental component of Australian landscapes—rural and urban

with community safety and other social values cannot be appropriately tackled until significantly increased levels of research, policy, management and public interest are maintained in the long-term. In the view of an international observer (Krebs 2003), a significant increase in resources available to these areas is a key to facilitating this.

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Australian Emergency Manuals

In response to client feedback, the structure of the Australian Emergency Manual series has been revised. The series no longer comprises five parts. The skills set manuals (formerly parts 4 and 5) are available from State and Territory training managers and are listed separately. The manuals are filed in alphabetical order for ease of location. Enquiries about the series should be directed to ema@ema.gov.au.

AUSTRALIAN EMERGENCY MANUALS SERIES STRUCTURE AND CONTENT

Manual 2	Australian Emergency Management Arrangements	
Manual 3	Australian Emergency Management Glossary	
Manual 4	Australian Emergency Management Terms Thesaurus	
Manual 18	Community and Personal Support Services	
Manual 29	Community Development in Recovery from Disaster	
Manual 15	Community Emergency Planning	
Manual 27	Disaster Loss Assessment Guidelines	
Manual 9	Disaster Medicine	
Manual 28	Economic and Financial Aspects of Disaster Recovery	
Manual 8	Emergency Catering	
Manual 1	Emergency Management Concepts and Principles	
Manual 23	Emergency Management Planning for Floods Affected by Dams	
Manual 5	Emergency Risk Management – *Applications Guide*	
Manual 11	Evacuation Planning	
Manual 20	Flood Preparedness	

Manual 22	Flood Response
Manual 21	Flood Warning
Manual 25	Guidelines for Psychological Services: Emergency Managers Guide
Manual 26	Guidelines for Psychological Services: Mental Health Practitioners Guide
Manual 13	Health Aspects of Chemical, Biological and Radiological Hazards
Manual 6	Implementing Emergency Risk Management – *A facilitators guide to working with committees and communities*
Manual 19	Managing the Floodplain
Manual 17	Multi-Agency Incident Management
Manual 7	Planning Safer Communities – Land use Planning for Natural Hazards
Manual 14	Post Disaster Survey and Assessment
Manual 10	Recovery
Manual 24	Reducing the Community Impact of Landslides
Manual 12	Safe and Healthy Mass Gatherings
Manual 16	Urban Search and Rescue – Capability Guidelines for Structural Collapse

EMERGENCY SERVICES SKILLS SERIES

Manual 38	Communications	
Manual 39	Flood Rescue Boat Operation	
Manual 37	Four-Wheel-Drive Vehicle Operation	
Manual 35	General Rescue	
Manual 33	Land Search Operations	
Manual 42	Managing Exercises	

Manual 36	Map Reading and Navigation
Manual 31	Operations Centre Management
Manual 34	Road Accident Rescue
Manual 41	Small Group Training Management
Manual 30	Storm Damage Operations
Manual 40	Vertical Rescue

Australian Emergency Manual – Recovery (second edition)

The first edition of the *Australian Emergency Manual – Disaster Recovery,* was developed in 1996 by a steering committee representative of the range of professions and government and non-government organisations responsible for recovery management and service delivery throughout Australia. It was a groundbreaking publication, providing a comprehensive guide and definitive text for planners, managers and workers involved in the direct delivery of recovery services.

A second edition of the Manual has just been released. Much of the informative content of the first edition has been retained, however, there are also a significant number of changes. These changes reflect ongoing developments in both knowledge and practice, as well as the expanding nature of events to which recovery strategies are applied.

Since the publication of the first edition of the Manual, EMA has also produced a series of Guidelines documents for specific aspects of recovery. These are:

- Community and Personal Support Services Guidelines;
- Guidelines for Psychological Service Practice
    - Mental Health Practitioners Guide
    - Emergency Managers Guide;
- Community Development in Recovery from Disaster; and
- Economic and Financial Aspects of Disaster Recovery.

This extensive range of recovery publications provides detailed information on recovery theory, practice and services to assist and hasten the recovery of communities from the effects of emergencies and disasters.

The essential components of these publications have been incorporated into the revised Manual, which has been updated in terms of policy, procedures and professional practice developments, as well as now addressing emergency risk management and sustainability. To ensure an holistic approach to recovery revisions the Manual also includes expanded and updated chapters on physical and economic recovery, as well as community development.

Similarly to the first edition of the Manual it is intended that the updated version will provide a useful and practical tool for use by planners, managers and workers from the range of organisations involved in the planning, management and delivery of recovery programs and services.

The manual and each of the abovementioned publications are available electronically on the EMA web site (http://www.ema.gov.au). Any queries relating to the manual series should be directed to ema@ema.gov.au.

EMA Research & Innovation Program

Report on emergency planning and management for high-density communities project

Dr Julie Shaw – Consultant – Safety By Design

Whether fears are actual or potential, Australian residents in high-rise and multi-unit dwellings are increasingly concerned about hazards such as fire, gas leaks, explosion, water damage or possibly, terrorist attacks. The private housing sector is less well served in this regard than public housing because participation of private owners in community education and training (e.g. for evacuation) is up to individuals.

All residents of multi-unit dwellings are better prepared and reassured if they have:

- an emergency strategy and a plan;

- relevant, useful, easily comprehensible information available to them;

- a structure for communication;

- facilitation by a responsible body (e.g. the Body Corporate);

- concern for an ethical framework (e.g. privacy and choice), which are stronger issues in residential rather than employment environments;

- coverage for people of non-English speaking backgrounds;

- arrangements for infants, young children, older residents, disabled residents, and

- a recognised volunteer component.

It is generally well known in the community that in the emergency sector, elaborate command-style response exercises are conducted. Urban search and rescue systems have been designed state-by-state. Joint service co-ordination exercises are conducted to manage communication between authorities and the roll-out of services and provisions in case of a large-scale, unexpected urban event such as a terrorist attack.

However relatively little research-based information is available about human factors and human behaviour in urban disaster situations. Observational reports from urban disaster settings in other countries are relevant but they do not exactly reflect the conditions of daily work, transportation and home life in Australian cities. Workplace-based models of emergency planning are also relevant, but this report found that the needs of private residents differ from those of workers and public tenants in two significant aspects, i.e. communication and enforcement.

Based on research undertaken in typical multi-unit buildings, the perceptions and needs of the residents, and current models for volunteer and community participation, the report makes recommendations for:

- infrastructure development;

- procedures; and

- training.

In two of the three buildings surveyed, measures including resident notice boards, fire orders and floor plans were installed and residents have volunteered to become involved in safety audits and evacuation planning. The City of Melbourne responded to the report with the planning the development of similar measures city-wide. A Manual is currently being prepared.

Australian Institute of Police Management (AIPM) Library

BACKGROUND: The Australian Institute of Police Management (AIPM) is part of the Australasian Common Police Services. The Institute provides executive leadership and management development opportunities to improve the corporate performance and productivity of Australasian law enforcement and allied agencies. The Institute has been integral in developing police managers and executives through its management and leadership programs, applied research and consultancy services. A primary focus of the AIPM is to enhance police performance and contribute to the professionalism of Australasian policing and public safety practitioners. For administration purposes, the AIPM comes under the corporate umbrella of the Australian Federal Police and all employees are employed under the Federal Police Act.

The Institute is governed by a Board of Control, comprising all Australasian Police Commissioners, which ensures that the mission, philosophy and goals of the Institute are relevant to the direction of Australasian Policing. The AIPM has a proud history of providing education, training and professional development for members of Commonwealth, State and New Zealand jurisdictions and public safety agencies. It has gained an international reputation for its contribution to police professionalism and the enhancement of performance in the areas of law enforcement and public safety.

The AIPM is situated on approximately 2.5 hectares of land located on the foreshores of Sydney Harbour and surrounded by the Sydney Harbour National Park. This unique location attracts a range of commercial clients who use the facilities for residential and day-use conferences.

The AIPM conducts executive development programs, two for the Australasian Fire Authorities Council (AFAC) and four for Australasian Policing. There are also two executive leadership programs and four volunteer development programs each year. The executive development programs and executive leadership programs are fully accredited with the New South Wales Tertiary Education Board and successful completion results in a Graduate Certificate in Applied Management and a Graduate Certificate in Executive Leadership.

The AIPM is co-located and affiliated with the Australian Graduate School of Policing (AGSP), a faculty of Charles Sturt University that conducts post-graduate distance learning programs to doctoral level.

The AIPM Library has been developed as a professional police management and leadership resource centre of excellence. The Library prides itself on providing current quality information, which supports professional development for the Australasian policing community.

The focus of the library is directed toward supporting the Institute and the educational philosophy and objectives involved in delivering the executive development programs and other programs offered by the Australian Institute of Police Management. The AIPM Library also supports the faculty and students of the Charles Sturt Australian Graduate School of Policing.

Information is provided to users on an as needs basis, delivered in the format and within the requested timeframe most suited to their needs.

This is achieved by:

- promoting library services;
- providing easy access to documents;
- offering interlibrary loans from other libraries;
- continuing to develop distinctive collections;
- assisting users in identifying and locating information;
- providing library orientations and workshops to facilitate use of the library and its resources; and
- ensuring that the library remains an integral part of the education resources unit of the AIPM and the Australian Graduate School of Policing.

The library currently holds 20,000 titles including monograph and audio-visual material. The emphasis of the library collection is in the subject areas of management, leadership, police administration, policing, criminal justice and emergency management.

Julie Canham, Library Technician

Caroline Lowder, Library Diploma student

The Library is used for training, meetings and research activities

The library also subscribes to 300 journal titles. Of these titles, 89 are Police law and criminology journals, both local and international. The remaining titles are predominately in the area of business and management, with a few titles in the areas of current affairs, education and curriculum, and general interest also included.

The Library & Information Services Manager liaises with other police and emergency services libraries in Australia, New Zealand, United States, Canada, and United Kingdom, as well as the tertiary institution libraries, other management school libraries and United Nations networks. Through the use of these networks the library is able to provide materials requested by its clients through the inter-library loan facility all over Australia and New Zealand. The AIPM Library is currently establishing and developing new alliances in Europe that will extend the AIPM Library's ability to provide an excellent cross-section of information.

Library Services

- 24-hour access to resident course participants.
- Library OPAC via the Internet.
- Intranet providing the latest reports and literature on topics of interest.
- Current awareness services of monthly bulletin, weekly journal contents, professional development displays, and circulation of professional development information.
- Lending of library resources.
- Inter-library loans and document delivery.
- International online database searching and information retrieval.
- Reference and research services.
- Targeted literature searches.
- Consultation when required for the enhancement of other library services.
- Information and instructional booklets on how to use the library, basic research skills, and using other information access facilities.

Photo top left: Connie Coniglio, Reference Librarian and Julie Canham, Library Technician
The photos above were taken at the Library which is nestled on the shores of Sydney Harbour and is a popular place for research and training

General Interest

Since its inception in 1960 the library has continually grown. The collection developed from a print-based resource to a predominately electronic-based resource. In recent years there has been a deliberate concentration on educating course members how to use the library effectively to enhance their own professional development and academic achievement.

To assist in the professional development of the policing and safety management community, the AIPM Library has established the AIPM Resources Centre, an electronic information management system designed to organise information for targeted user groups. Through the Resource Centre the Library is able to disseminate the latest electronic information, such as reports, journals and published papers, to its varied clientele, course participants, institute staff, police jurisdictions and AIPM Alumni.

Most departments measure productivity and profit in financial terms and never consider the hidden productivity and financial gains. The AIPM and its Library has developed an excellent reputation with police organisations and with other service organisations. Profit for the AIPM is measured in terms of what it has achieved and how well the budget dollar is spent. Likewise, the Library shows great profitability when the number of its resources has grown considerably and those resources are used extensively.

National Emergency Services Memorial unveiled

by Alastair Wilson

On a cold windswept mid-July Canberra morning this year, emergency service personnel and volunteers from across the country converged in Kings Park on the shores of Lake Burley Griffin to watch Prime Minister, the Hon John Howard MP unveil a 23 metre-long, 80 tonne national memorial, dedicated to the work of emergency services.

The $1 million project, managed by the National Capital Authority (NCA) in consultation with Emergency Management Australia (EMA), honours the work and support provided by Australia's national emergency service personnel.

Director General of Emergency Management Australia, David Templeman, said the memorial is dedicated to the commitment, camaraderie, and sacrifice of the thousands of people who work so professionally in the sector.

"This memorial highlights the many events that have changed our life as a nation such as the Cyclone Tracy disaster, the Newcastle earthquake, Ash Wednesday, the Sydney and Canberra fires, the Bali Bombing aftermath, cyclones, floods, search and rescue emergencies, and road trauma," said Mr Templeman.

As the first national community emergency services community memorial created in the National Capital, it provides a place that encourages people to recall and acknowledge events that have changed their lives. It symbolises emergency workers involved in immediate response to disasters, in recovery and consequence management, and in restoring critical infrastructure that helps communities and families recover.

A steering committee, chaired by Professor Desley Luscombe, Dean of Architecture at University of Technology, Sydney, with representatives from the Australian Council of State Emergency Services, Australasian and South West Pacific Police Commissioners' Conference, Australasian Fire Authorities Council, Convention of Ambulance Authorities, Emergency Management Australia and Volunteering Australia, worked on the project since the site was chosen for the memorial in 2000.

The giant concrete frieze symbolises the work and support provided by national emergency service personnel in a 3-D format. Melbourne landscape architects, Aspect Melbourne Pty Ltd, won a national competition in March 2003 for the innovative design of the structure. The artist who conceived the frieze for

The Prime Minister dedicates the memorial, July 2004

The memorial embodies a single, powerful gesture of the spirit of emergency services personnel

the memorial was Charles Anderson. The concept was artfully sculpted by Darryl Cowie and cast in concrete by Adelaide firm CDG Contractors.

Transcript of the opening dedication by the Prime Minister available at http://www.pm.gov.au/news/speeches/speech983.html.

The memorial's arc and sweep depicts protection

About the memorial

The memorial wall travelled from Adelaide to Canberra and was collaboratively designed by some of the country's best landscape architects, artists and sculptural fabricators. The original intent for the project was to produce a memorial that embodied in a single, powerful gesture, the spirit of emergency services.

The memorial breaks from the gentle fall of the surrounding landscape overlooking Lake Burley Griffin, evoking the catastrophic events that call emergency services into action. On the other side, the memorial is an inward folding form depicting protection and comfort during times of tragedy.

The memorial's frieze gathers a collection of images reflecting the diversity of emergency services personnel at work and records some of their experiences. The bronze memorial ledge frames the frieze and allows for contemplation of those who serve and those who accept aid. On the east face of the memorial are words that embody the values and professionalism of the emergency services personnel.

The design and construction of the memorial wall and frieze involved innovative computer modeling and fabrication techniques.

The memorial is one of the first civilian memorials on the shores of Lake Burley Griffin and compliments the traditional military memorial axis of Anzac Parade.

EMA Update

Emergency Management Australia provides national leadership in the development of measures to reduce risk to communities and manage the consequences of disasters. EMA Update keeps AJEM readers abreast of the courses and activities that assist in this aim.

KNOWLEDGE MANAGEMENT & BUSINESS

Community Awareness Activities

The new Action Guide (Pets in Emergencies) is being distributed with the kind assistance of the Australian Veterinary Association (AVA) to its members through the AVA website. The guide aims to provide helpful tips to pet owners on managing their pets in emergencies. A limited number of print copies are available from EMA. The Action Guide is also accessible via the EMA website.

Australian Emergency Manual Series

The structure of the Australian Emergency Manual series has been revised in response to client feedback. The new structure is published on page 85. The series no longer comprises five parts. The skills set manuals (formerly parts 4 and 5) which are available from State and Territory training managers, are listed separately. The manuals are filed in alphabetical order for ease of location. They are available for free download from the EMA website at www.ema.gov.au. A CD with full hyperlinks is available from EMA. There are a limited number of print copies also available.

For further information contact Cate Moore
Phone 03 54 21 5296; email: cate.moore@ema.gov.au

Library

The staff in the EMA library continue to provide a high level of support to the emergency management sector by ensuring the library collection reflects client information requirements. Client information needs reflect ongoing changes in emergency management and the EMA library is always at the forefront in ensuring material that reflects current issues and trends is available to clients.

Recent new book topics include disaster recovery, planning and thinking skills, critical infrastructure protection and the new *Risk Management Standards.* As lifelong learning and continuing personal development are important concepts in the workplace, the library has recently purchased a series of training videos covering topics such as active listening, decision-making, problem solving, delegation, and skills in conducting meetings. These can be used in small groups or individually with the help of the accompanying training guides. Library staff ensure that current information and new purchases are reflected in the library catalogue which is accessible from the EMA website.

The next workshop for the Australasian Libraries in the Emergency Sector (ALIES) will be held at Mt Macedon from 21–24 March 2005. The theme is Partnerships in Practice. Enquiries relating to ALIES or this forthcoming workshop can be directed to the EMA Library Manager.

For further information contact Linda Hansen
Phone 03 5421 5224; email linda.hansen@ema.gov.au

Website

The website has continued to give EMA a strong web presence with a daily average of 11,000 hits. Approximately 40% of all visits came from outside Australia, including 30% from USA and Canada.

Disasters Database

The upgrade to the EMA Disasters Database has seen usage increase to an average of 50,000 hits per month, approximately 15% of all hits. This site is used extensively by schools, researchers and emergency management professionals.

Australian Disasters Information Network (AusDIN)

The numbers of AusDIN users has grown considerably. Groups using this facility include AusDIN Working Group, AusDIN Portal Group, Emergency Management Spatial Information Network Australia, National Community Safety Working Group, and Australasian Libraries In Emergency Sector. New sub groups in this forum are the Australian Government Community Safety Working Group, and the Volunteer Research Group.

Development of Emergency Planning Resources CD for Local Government

Together with Australian Local Government Association (ALGA), EMA has begun the development of a resource CD to help local governments meet the emergency planning requirements recommended by the Council of Australian Governments (COAG) report. The material contained on the CD aligns with EMA's Emergency Planning for Local government course.

For further information contact John Haydock
Phone 03 54215297; email john.haydock@ema.gov.au

EDUCATION & TRAINING

Advanced Diploma of Public Safety (Emergency Management)

The Advanced Diploma of Public Safety (Emergency Management) will be piloted in 2005/6. The program will be delivered flexibly requiring off campus study, a residential component at EMA and work based learning. The inbuilt flexibility in the Public Safety Training Package means that many people may already have units of competency that form part of this qualification. For more information see Education and Training Bulletin Number 3 at www.ema.gov.au.

Recovery Management

The National Recovery Coordinators' Network and the Emergency Management Sector Working Group will co-operate in a project to identify competency standards for recovery management for inclusion in the *Public Safety Training Package.* The project commenced in October and will conclude in mid 2005. Consultations will take place in every State and Territory. Information will be available at www.ema.gov.au as the project progresses.

Emergency Management for Local Government

The course in Emergency Management for Local Government has now been accredited by the Victorian Qualifications Authority for national recognition. The program is currently delivered by EMA and by the Emergency Management Services Division of the Fire and Emergency Services Authority in Western Australia. For entry to EMA's risk management programs candidates must have completed either the Course in Introduction to Emergency Risk Management or the Course in Emergency Management for Local Government.

Contact Margery Webster Phone 03 5421 5283; email margery.webster@ema.gov.au

Business Continuity Management

EMA is developing a new program designed to build skills in managing business continuity in the emergency management sector. The program is based on the *Handbook for Business Continuity Management* published by Standards Australia (HB:221) and will be available in 2005.

Training for Chemical Biological and Radiological (CBR) Incidents and Emergencies

The National CBR Working Group and other stakeholders have participated in the development of a range of competency profiles for managing and responding to CBR incidents. EMA has used this work to identify CBR scenarios for a number of programs aligned to relevant national competency standards. The EMA program of activities includes Emergency Planning and Emergency Coordination Centre programs with a CBR context. The working group also identified the need for a national CBR awareness program. This is being developed by EMA in consultation with stakeholders nationally and will be available in CD-ROM format.

For more information contact Margery Webster Phone 03 5421 5283; email margery.webster@ema.gov.au

DEVELOPMENT

2004 Australian Safer Communities Awards

The 2004 Australian Safer Communities Awards ceremony was held in the Mural Hall at Parliament House, Canberra in early December 2004.

The Awards recognise the best practices and innovations that help to build safer communities. They cover organisations and individuals working in risk assessment, research, education and training, information and knowledge management, prevention, preparedness, response and recovery. Details of the awards including information on past years' winners are available on the EMA website at www.ema.gov.au.

For more information contact Li Peng Monroe Phone: 02 6256 4610; email: lipeng.monroe@ema.gov.au

Emergency Management Volunteers Summit 2005

Planning continues for the *Emergency Management Volunteers Summit 2005* to be held in Canberra from 6–7 April 2005. Themes have been further refined and are as follows:

THEME 1 – Drivers for change

Change is a way of life that the emergency management volunteer sector needs to continually assess to maintain relevance, growth and sustainability.

There needs recognition that:

• social and demographic changes are affecting the pool of potential volunteers that the emergency management sector draws from;

DEVELOPMENT CONT

- changes in attitude, both within and outside the volunteer sector, are required to attract and retain a diverse range of volunteers
- changes in legislative arrangements must be accommodated, and
- the operational tempo within the sector will continue to increase.

THEME 2 – Enhancing links to further benefit volunteers and their communities

Members of the emergency management volunteer sector, as individuals, groups and organisations, need to enhance existing links between communities and their volunteers for greater recognition and support.

- How do we improve the interface between governments at all levels, the private sector and the community as a whole?
- What do volunteer organisations need to focus on to improve member benefits?
- Can the perceived needs of volunteer organisations and their members be mutually accommodated?
- How can we further improve the recognition of volunteers by government and the community?
- Should sponsorship opportunities be lifted to a commercial level?

Registration forms have been sent to organisations for dissemination to nominated representatives. For more information about your organisation's nominations please contact your volunteer organisation directly.

For more information contact Justine Rixon
Phone: 02 6266 5616 email: justine.rixon@ema.gov.au

Emergency Management 'Volunteers in Action' Photographic Competition

During 2002 EMA conducted a photographic competition showcasing emergency management volunteers in action. To recognise the work and value of volunteers in Australia's emergency management and service organisations EMA is conducting another nation-wide photographic competition in 2004 with the prizes being awarded at the Emergency Management Volunteers Summit 2005 to be held 6–7 April 2005 in Canberra. Full details are provided on the back cover of this issue of AJEM.

For more information contact Susan Stevens
Phone: 02 6256 4611; email: susan.stevens@ema.gov.au

PLANNING & OPERATIONS

Emergency Services Sector Infrastructure Assurance Advisory Group

A further meeting of the Emergency Services Sector Infrastructure Assurance Advisory Group (ES IAAG) was conducted on 9 September in Adelaide.

The meeting was attended by emergency services representatives from States and Territories, emergency services peak bodies, the Australian Red Cross, relevant Australian Government agency representatives and representatives from other industry sector IAAGs.

The group's activity continues to focus on issues aimed at ensuring continuity of provision of emergency services in response to the impact of all hazards, including those that may result from acts of terrorism.

Member agencies shared information on a range of issues including identification of critical emergency services infrastructure, risk assessment tools and methodologies, threats and vulnerabilities, mitigation strategies and treatment options. A brief discussion exercise was conducted aimed at more accurately identifying the dependencies that the emergency services have on other industry sectors. The outcomes

of this discussion will be raised formally with the relevant industry sectors e.g. "communications" "energy" and "health".

Other issues discussed included consideration of a draft set of emergency services specific measures that may be appropriate to implement in response to increased threat and Counter Terrorism (CT) Alert Levels and progression of the plan to establish an Emergency Management Expert Advisory Group.

A teleconference meeting of the ES IAAG is scheduled for November with the next formal meeting early in the New Year.

For further information contact David Morton
Phone: 02 6256 4617; email: david.morton@ema.gov.au

World Conference on Disaster Reduction

In January 2005 the United Nations will hold its World Conference on Disaster Reduction, hosted by the Japanese Government in Kobe. EMA has been involved in a number of activities in preparation for the conference. In May an EMA staff member participated in an international meeting to determine

PLANNING & OPERATIONS CONT

the objectives, format and guidelines of the conference. In June EMA provided funding to the South Pacific Applied Geoscience Commission (SOPAC) for a regional workshop. This workshop brought together stakeholders to develop a Pacific Plan of Action addressing issues to be raised at the conference. In September EMA representatives met with delegates from Tonga, Fiji and SOPAC to determine a strategy for using the conference to bring important Pacific issues to a wider audience. EMA is now taking the lead among Australian Government departments in co-ordinating the Australian delegation and input into the remaining preparatory meetings and the conference itself.

For further information contact Joanne Laurence
Phone: 02 6256 4621; email: joanne.laurence@ema.gov.au

National Casualty Transport Study

EMA has engaged Mr Frank Cox AO (Air-Vice Marshall Ret'd) to conduct a study into Australia's casualty transport capability. The Australian Health Disaster Management and Policy Committee (AHDMPC) identified through an audit of capability in 2003, that the transport of casualties was an area of potential vulnerability. The study will compliment work done by other agencies such as the ADF and the Department of Health and Ageing.

The study will:

- Determine a sustainable statement of the national casualty transport requirement based on current and credible threat assessments.
- Analyse the gap between current capability and the desired requirement.
- Identify a way forward to redress any shortfall, including consideration of optimising and/or expanding the ADF and other Commonwealth assets, private sector involvement or other means. This will include consideration of resourcing issues.

During the course of the study Frank Cox will consult widely with Australian Government departments, State and Territory Governments and non-government transport providers. A scenario based questionnaire has been circulated to all jurisdictions and responses will form the basis of discussions during consultations.

For further information contact Tracy Hicks
Phone: 02 6256 4680; email: tracy.hicks@ema.gov.au

CBR Crime Scene Investigation

EMA piloted a Chemical Biological and Radiological Crime Scene Investigation course at its training facility at Mount Macedon on 28 June–2 July. All State and Territories were represented on the 24-course panel. Criminal investigations involving the use of CBR materials require the use of appropriate sampling, collection, transportation, and chain of custody techniques. Participants conducted a number of investigative activities operating in Level A and Level C protective clothing. The course was conducted to meet a training need identified by the National CBR Working Group. It is envisaged the next course will be held in mid to late 2005.

For further information contact Don Patterson
Phone: 02 6256 4625; email: don.patterson@ema.gov.au

National Registration and Inquiry System– Exercise Murphy 04

EMA and Department of Health and Ageing facilitated the annual National Registration and Inquiry System (NRIS) Exercise Murphy 04 on 14 October 2004. The activity involved State Inquiry Centres from all the eight States and Territories. The exercise tested the importation of registration and inquiry data onto the NRIS database with over 2000 registrations and 1700 inquiries being entered over the six hours of the exercise. NRIS provides a valuable tool to emergency managers for the recording of displaced persons during an emergency and has been utilised during a number of recent disaster events in Australia including the 2003 ACT bushfires where several thousand registrations were recorded. While NRIS is utilised regularly at State level, the national exercise is conducted annually to ensure functionality by loading a high volume of data on the system, and to provide a training opportunity for Australian Red Cross personnel who staff State Inquiry Centres.

For further information contact Don Patterson
Phone: 02 6256 4625; email: don.patterson@ema.gov.au

CONFERENCE DIARY

Conference details are sourced from the EMA website.
For more information about these and future conferences, visit www.ema.gov.au

INTERNATIONAL
2004 December

2–4 December 2004

Location	Hyderabad, India
Title	Hazards 2004: The Tenth International Symposium on Natural and Human-induced Hazards and Third Workshop of the IUGG Commission on Geophysical Risk and Sustainability.
Details	Topics covered will encompass the entire spectrum of natural and human-induced hazards, their causes, risks, and management. All aspects of these phenomena from disaster prevention, mitigation, and management through public education and preparedness will be covered.
Enquiries	Hazards 2004, National Geophysical Research Institute, Hyderabad - 500007 India.
	tel: 0091-40-23434700;
	email: sec-loc@hazards2004.org
	web: http://www.hazards2004.org/
Sponsor	National Geophysical Research Institute

5–8 December 2004

Location	Philadelphia, Pennsylvania
Title	Partners in Preserving Liberty: U.S. EPA Region III Emergency Preparedness and Prevention Conference.
Details	This conference is geared toward emergency responders, environmental health and safety workers, those who deal with hazardous materials, maritime security, first responders, transportation and shipping, emergency medicine, and others.
Enquiries	EPA Region III, 1650 Arch Street (3PM52), Philadelphia, PA 19103.
	email: ConferenceAdministrator@2004conference.org
	web: http://www.2004conference.org.
Sponsor	U.S. Environmental Protection Agency (EPA).

8–20 December 2004

Location	Nanjing, China
Title	4th International Conference on Dam Engineering
Details	With the rapid economic and industrial growth of many regions in Asia, the development of water resources is a vital element of the infrastructure to satisfy the ever increasing demand for power, irrigation, and drinking water supply. This development includes both the construction of new facilities and the rehabilitation of existing older plants. Dams are usually the key element in such facilities and their economic construction and safety are of paramount importance. This conference will provide a forum for the exchange of experiences among dam designers, constructors, and operators on the behavior of dams.
Enquiries	Qingwen Ren, College of Civil and Engineering, Hohai University, Xi Kang Road 1, Nanjing 210098 P. R. China.
	email: qingwenren@yeah.net
	web: http://www.dam04.com.
Sponsor	Hohai University

13–14 December 2004

Location	London, Ontario
Title	International Workshop on Water and Disasters
Details	The conference aims to bring together researchers in academia and industry as well as land use planners and technology network managers, who are concerned with the study of MIS problems and its applications. The meeting will act as an interdisciplinary forum for the discussion of problems of common interest.
Enquiries	ICLR, 1389 Western Road, London, ON, Canada N6A 5B9.
	tel: (519) 661-3234
	email: sdoyle@uwo.ca
	web: http://www.iclr.org/pdf/First_Announcement_2004.pdf.
Sponsors	Institute for Catastrophic Loss Reduction (ICLR), Environment Canada, United Nations University, International Strategy for Disaster Reduction

INTERNATIONAL

2005 January

18–22 January 2005

Location	Kobe, Japan
Title	World Conference on Disaster Reduction: A Safer World for All
Details	This conference will provide extensive discussion, related sessions, and networking opportunities, while assessing progress on the "Yokohama Strategy and Plan of Action" from 1994 with the international goal of raising awareness of vulnerability, disasters, policy development, and action.
Enquiries	UN/ISDR, Palais des Nations, CH 1211 Geneva, Switzerland.
	tel: 41-22-917-2103
	email: isdr@un.org
	web: http://www.unisdr.org/eng/wcdr/First-Announcement-WCDR-eng.pdf.
Sponsor	United Nations International Strategy for Disaster Reduction (ISDR).

9–11 February 2005

Location	Las Vegas, Nevada
Title	Sixth Annual Aviation Security Summit and Expo
Details	The aviation security community is faced with implementing rapidly changing security measures and equipment while ensuring continued effective operations. Airports and airlines are striving to keep up with the latest security trends and regulations without compromising efficiency.
Enquiries	Summit details are available at http://www.worldrg.com/AW500/index.
Sponsors	Honeywell, Object Video

AUSTRALIA

22–25 February 2005

Location	Narooma, New South Wales
Title	45th annual conference of the Floodplain Management Authorities of NSW
Details	The 45th annual conference of the Floodplain Management Authorities of NSW will be hosted by the Eurobodalla Shire Council. Papers presented always range widely across the flood risk management field and include emergency management themes relating to warning system development, evacuation planning, response management and the conduct of community education campaigns about the flood threat. Legal, environmental and engineering considerations relating to the management of flood liable land are also examined.
Enquiries	tel: (02) 4474 1085, www.floods.org.au.
	email: kathryn.stonestreet@eurocoast.nsw.gov.au
Sponsor	Floodplain Management Authorities of NSW.

17–18 March 2005

Location	Perth, Western Australia
Title	2005 West Australian Emergency Management Conference: Bridging the Gap Between Crisis and Consequence Management.
Details	The conference seeks to explore the relationship between crisis and consequence management as it applies to the field of emergency management. It provides new ideas and approaches to problem solving in emergency management; leading edge and topical presentations from international and local speakers; and opportunities to network with key individuals and organisations across the emergency management industry.
Enquiries	Management Conference FESA Emergency Management Services PO Box P1174 PERTH WA 6844.
	Tel: +61 8 9323 9418
	Fax: +61 8 9323 9462
	email: ssmith@fesa.wa.gov.au
	web: http://www.ems.fesa.wa.gov.au
Sponsor	Fire and Emergency Services Authority of Western Australia, Government of Western Australia.

interesting websites

Disaster Recovery Management Unit, Qld
http://www.communities.qld.gov.au/community/disaster/

The Queensland Government has a Disaster Recovery Management Unit that manages the co-ordination of all community recovery services for a particular event. The Unit's web site provides guidelines to assist individuals, families and communities in the restoration of emotional, social, economic and physical wellbeing following a disaster event.

Department of Community Services (DoCS), NSW
http://www.community.nsw.gov.au/html/disaster/disaster.htm

The NSW Department of Community Services (DoCS) has responsibility for all disaster recovery services across NSW under the Government's State Disaster Plan (DISPLAN).

Information in the site includes drought relief, bushfire and flood recovery, financial assistance, replacing documents and disaster checklists. It provides details on recovery and evacuation centres and reports on recent disaster relief work.
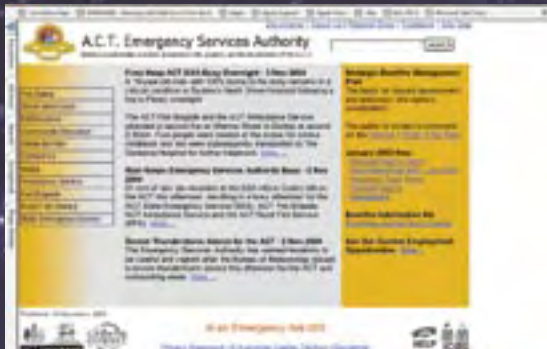
The Emergency Services Authority, ACT
http://www.esa.act.gov.au/

The Emergency Services Authority in the ACT provides a wealth of information for flood, fire and earthquake both pre and post disaster. It is a one-stop shop for disaster preparedness, safety and emergency contacts.

The Department of Human Services, Vic
http://www.dhs.vic.gov.au/emergency/recman/index.htm

The Department of Human Services in Victoria provides a comprehensive access point to a wide variety of emergency management and recovery information. This includes emergency recovery management and services, human response and services, local government emergency management as well as publications and emergency contacts.

Want to advertise in the Australian Journal of Emergency Management?

Emergency Management Australia now offers you the opportunity to communicate to over 5,000 members of the emergency management community by placing either a half page or full page advertisement in the Australian Journal of Emergency Management (AJEM).

AJEM is published in February, May, August and November each year and is professionally distributed to a wide cross-section of the emergency management industry.

The deadline for advertising submissions is eight weeks before each respective issue. AJEM will accept print-ready artwork (most professional design programs) or will provide in-house graphic design with associated costs billed to the advertiser.

Please note the AJEM Editorial Board reserves the right not to publish advertisements it deems inappropriate to the goals of the Journal. Should this occur, the decision of the Board is final.

For rate card and details please contact Cate Moore, email cate.moore@ema.gov.au or tel:+61 (03) 5421 5296.

Photographic Competition
Emergency Management Volunteers in Action

A unique national photographic competition is being conducted by Emergency Management Australia to recognise the work and value of emergency service volunteers and their organisations. It will be for photographs taken between 1 July 2003 and 31 January 2005, and winners will be announced and awards presented during the Emergency Management Volunteers Summit 2005, in Canberra 6–7 April 2005.

The Volunteer Story

The competition aims to attract a range of photographs that depict volunteers at work in all types of situations, and tell the volunteer story of dedication, commitment and sacrifice in times of disasters and emergencies.

The photographs will recognise the work and value of volunteers in Australia's emergency management sector.

Competition Streams

The first stream is for professional photographers either employed by media organisations or who work on a freelance (paid) basis.

The second is for photographs taken by emergency management volunteer organisations and/or individual volunteers. They may have been published, or are unpublished.

Awards

The photographer/organisation/volunteer judged to be the outright winner in each stream will receive photographic equipment of their choice to the value of $2500 and a certificate. Highly Commended entrants in each steam will receive photographic equipment of their choice to the value of $1000 and a certificate. The judging panel may make Commended Awards, with the entrant receiving a certificate.

More information and Entry Form

Please contact Susan Stevens, phone 02 6256 4611 or email susan.stevens@ema.gov.au, or go to the EMA website, **www.ema.gov.au**

Entries close 14 February 2005

EMA *'safer sustainable communities'*