The Australian Journal of Emergency Management

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Cover: The outbreak of Foot and mouth disease in the UK in February 2001 created a crisis for the farming industry. Images D Burgess

The Australian Journal of **Emergency Management**

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The aim of this publication is the exchange of information and views across the Australian emergency management community, therefore, the views expressed in this journal should not be taken to be the views of Emergency Management Australia.

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As the proud patron for this year's International Year of Volunteers, I have been honoured to meet, work, talk and plan with many volunteers who have inspired me. It is something that I know a bit about, having been involved, for more than 40 years, with the whole voluntary cause.

I rejoice that this year is an opportunity to promote the great significance to our nation and to the world of voluntary service.

It is based on a tradition of mutual support, of mateship and practical help that goes back over 200 years of our history in this harsh, unyielding and sometimes dangerous land. It was an obvious thing for the young men in 1914 to be volunteers. They were simply doing what their forebears had always done in time of need and crisis to come forward and offer themselves. That's what you have done as volunteers.

Today there are many people in our society who may feel powerless to address the social problems around them. Many worry about the future but then see its protection as being someone else's responsibility.

Volunteers are different. Volunteers form the fabric of a civil society. They are its lifeblood. It is not only important what you do—of profound significance though that is—it is also important who you are, and what you stand for, and what you contribute to the building of a nation.

In their contribution to society and their support of others, I sense that many volunteers are able to feel a deep inner peace, a feeling which comes to all of us when we give ourselves to others.

But that does not mean that volunteers don't need recognition, back-up, encouragement and support, and indeed good management.

And that brings me to the theme of the National Summit for Emergency Management/Services Volunteers 'Value your volunteers, or lose them'.

It's hard to imagine that people who have played such a significant role in Australia's history as emergency service volunteers could ever be undervalued. I don't believe volunteers are or have been. But there's always an opportunity for a timely reminder.

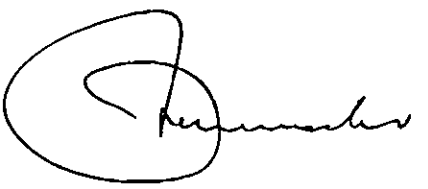
When the nation needs volunteers, they are there—on land, sea or air; in times of fire, flood, cyclone or civil calamity. And that's always been the way over the past 100 years of our nationhood. But while the wider community salutes the efforts of volunteers in high profile emergency situations, I know that volunteer contributions behind the scenes continue day-by-day, month-by-month and year-by-year.

It should be said that not everyone is cut out to be an emergency volunteer. Many volunteers are required to take considerable risks. They are called out at short notice. They are expected to work in uncomfortable, trying and sometimes dangerous conditions. In many ways that is the cutting edge of volunteering.

The National Summit focused on legitimate areas of concern to volunteers in leadership and management positions throughout emergency services in Australia. It's a credit to the organisers of the National Summit to have placed the key issues of recognition, funding, training and legal liability squarely on the agenda.

The Australian community as a whole wishes all volunteers well in considering these important issues and thanks volunteers for their continued work on its behalf.

(This message is based on the opening speech for the National Summit for Emergency Management/Services Volunteers, 11 October 2001.)



Peter Hollingworth
Governor-General of the
Commonwealth of Australia

Volunteering in Emergency Services: the South Australian perspective

by Adaire Summers BSSc, Grad Dip Ed,
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Australia would become dysfunctional if it were not for its volunteers. Volunteers come from all walks of life and provide their services in many different arenas. From emergency services to the arts, from localised service delivery to strategic roles such as membership of boards and committees, the input of Australia's volunteers has traditionally and continues to be the backbone of this country. The nature of volunteering itself is changing, with the increasing formalisation of the volunteer sector.

Some 15 years ago Eva Schindler-Rainman (1984) wrote that volunteering was moving from the 'no longer to the not yet'. In real terms, the effect of this on the industry of volunteerism means 'Change, Challenge, Creativity, Choice and Collaboration' (Schindler-Rainman 1984).

The face of Australian volunteers, in these rapidly changing times, is also changing, as is the structure and settings in which people volunteer. With changing demographics such as urbanisation, the ageing population, zero population growth and more women entering the workforce comes a plethora of issues for the volunteer industry. One group of volunteers particularly feeling the sharp edge of these changes is the emergency service volunteers.

Emergency Services in South Australia, with particular reference in this instance to the Country Fire Service (CFS) and the State Emergency Service (SES) rely entirely on its self-managed, volunteer teams to provide a professional, reliable and efficient response to a range of emergencies at the local level. It is difficult to gain an accurate picture of the total voluntary contributions of Australians as many organisations that utilise volunteers are still developing mechanisms to measure their exact numbers and the hours worked. Conservative estimates are that around 2.6 million volunteers contribute a total of 433.9 million hours a year (Australian Bureau of Statistics 1995). Good news, but how does this relate to emergency services, and why, then, is it becoming increasingly difficult for emergency services to recruit and retain volunteers and, more importantly, what can be done about it?

A look at the changing trends in volunteering may provide part of the answer. There is a perception that there are less older people volunteering. 'There is some anecdotal evidence that ageing Baby Boomers are selfish and not wanting to volunteer' (Volunteering Vision 2001 July 2000). Older Australians are also healthier and are staying in the workforce longer, leaving less time to devote to volunteering than they historically have. Younger people are volunteering, however, for short periods and sometimes in a variety of different sectors. Government initiatives such as mutual obligation and increasing emphasis on community service through educational institutions and the workplace are seen to have contributed to this. Often younger people volunteer to gain job skills and for social reasons, particularly in urban areas.

There have been limited studies undertaken that indicate there is a difference between urban and rural volunteers. It appears that urban volunteers are enticed to volunteering more by the prospect of job skills and social contact and to a slightly lesser degree to provide service to their communities. Rural volunteers tend to be motivated foremost to serve and protect their own lives and properties and that of their communities, with social contact and job skills being a low priority for these volunteers (Gare 2000).

Change has been one of the greatest issues affecting emergency service volunteers over the past few years, in particular, the last two years in South Australia. Indeed, Schindler-Rainman (1984) was almost crystal-ball gazing when all those years ago she pointed out that, 'nationally and internationally, the Volunteer World is in transition. It is moving from the past to the present, and from the present to the future. If we manage, indeed strategise, these transitions carefully we can impact the direction of change, and we can be pro-active in directing the changes in ways we desire. The time between now and the changed situation is the "Transition State", and it is this state we must learn to manage. We must learn transition management skills and strategies.' (Schindler-Rainman 1984).

The formation of the Emergency Services Administrative Unit (ESAU) is an indication of the times of change we live in. 'It will be necessary to develop new and creative ways to involve and integrate new populations, and to become familiar and comfortable with organisations different from our own so that collaboration becomes easy and natural. We need to be clear about and proud of our strengths, skills, and knowledge, and know how to communicate these.' (Schindler-Rainman 1984).

ESAU was formed to provide administrative functions for three emergency service agencies in South Australia, the Country Fire Service (CFS), the State Emergency Service (SES) and the South Australian Metropolitan Fire Service (SAMFS). For the purposes of this article, the focus is on the CFS and SES as local service delivery is via volunteers. Schindler-Rainman (1984) also points out the necessity of doing things in different, new and creative ways. 'To develop new and different funding patterns and sources; to barter for services, space, equipment usage; to find all the ways in which volunteers and professionals can extend and humanise our services; to learn to understand and utilise new technologies; to become more accountable and cost effective; to evaluate our services, to scrutinise our goal and mission statements and, if necessary, to reprioritise and reorder them or develop new ones; to utilise the corporate responsibility emphasis and commitment more than we have in the past'.

Demand for volunteer leaders to adopt modern management practices is increasing. This is effectively widening the gap between the 'haves' and the 'have nots', in terms of the experience, knowledge and skills of volunteers in emergency services, ESAU, through the Volunteer Management Branch (VMB) provides support services

to assist in closing the gap. Higher levels of accountability and responsibility both on and off the incident battlefield go hand in hand with these demands, creating pressures emergency service volunteers are grappling with on a daily basis.

There exists a wide range of skills, experience and knowledge within the emergency service organisations, with a great lean towards the hands on, operational side of the business. This leaves gaps in non-operational aspects of running an organisation. As a higher level of accountability and responsibility are required, support services such as those provided by the VMB are becoming essential to ensure the long-term healthy functioning of a brigade or unit. A survey carried out in the UK in 1998 by the Institute for Volunteering Research indicates that more voluntary organisations are moving towards formal structures in volunteer management. Conclusions from the survey support the localised support service delivery of the VMB as, 'volunteer management appears to be becoming increasingly formalised...'

Our model of service delivery is quite unique. Developments in the volunteer industry over the past decade move towards a more professional view of volunteer management and involvement. Accountability, responsibility and structure are becoming more the norm in recent years in contrast to the past, more informal nature of volunteering. Emergency service volunteers are responsible for organising, managing and running their own organisations, both operationally and non-operationally. Physical resources and funding are provided through the State with CFS and SES volunteers responsible and accountable for both.

The provision of support and structure to volunteers through formal mechanisms appears to be a global trend in a variety of volunteering streams, such as community service, the arts, health, education, sport and recreation, environment and emergency services. In South Australia, numbers of volunteers in emergency services (CFS and SES) exceed 20,000. Volunteer management support services are localised through regionally based Volunteer Support Officers (VSO's) who work with individual brigades and units on a local level as the need dictates with a centrally based coordinated approach to policy and planning.

VSO's provide consultancy services around recruitment, retention and recognition of volunteers along with resources and tools to assist with recruitment campaigns, recognition and retention programs. Leadership and management have a strong focus with training provided to volunteers for both. Support for administration functions is also provided by the VSO.

Brokerage services are utilised for issues such as mediation and conflict resolution, whereby the VSO facilitates external assistance in the resolution of issues at a local level. VSO's also provide advocacy services when required. For example, this can take the form of negotiating with employers, terms and conditions of release of volunteers for attendance at incidents.

It is becoming increasingly difficult to recruit and retain volunteers in any industry, as previously mentioned. Competition between organisations for people with the necessary skills and interests is fierce with prospective volunteers expecting increasing professionalism when they enter voluntary organisations. These expectations cover a range of areas, such as up to date management practices, exceptional leadership of local volunteers and top quality, recognised training.

This begins with impressive recruiting campaigns and continues with appropriate selection processes, job descriptions, induction and orientation, on the job and specialised training that includes state of the art technology and up to date equipment (and they deserve no less!). The prospective volunteer will also expect, and be entitled to, open lines of communication and information about the systems and processes that are utilised both internally and within the wider organisation. Information about OH&S policies and procedures, what their insurance entitlements are, reimbursement for out of pocket expenses, in fact any policy or procedure that protects the volunteer and enhances their volunteering contribution.

Volunteers will also expect to observe a transparent and consultative decision making process and have recognised input into that process. There will be an explicitly stated vision and mission of both the larger organisation and the brigade or unit the volunteer joins. They will expect to work as a team to set the direction and goals for the brigade or unit and will be prepared to undertake the tasks necessary to do their part in reaching the goals.

They will work with people who are exceptional communicators, who know their jobs and their people well, who take responsibility for their actions and expect others to take responsibility for theirs also. The new volunteer will expect their team to be professional and have integrity, their leader to understand them, what makes them tick and to give them assignments or duties that both compliment and challenge their skills, experience and interests.

This does not even begin to take into account the complex operational functions, roles and responsibilities that make up the core business of the volunteer teams. Wow! A big ask for people who are volunteers and volunteer managers — the majority of whom do the job in the first place to protect their communities, people who have their own jobs, families and would like a bit of leisure time occasionally.

Sometimes, support, education, advice and encouragement does not go astray. The level of support provided by the VSO's varies according to the needs and requests of the brigade or unit. The VSO might just provide information on OH&S issues or provide linkages to trained OH&S staff. There might be a need for management training in a range of areas such as, succession planning, administration, teamwork, conflict resolution, how to run effective meetings, delegating, team communication or dealing with difficult people. The VSO is trained and equipped to deliver these on a local level, usually at the local brigade or unit and usually on a night volunteers already get together to train.

There is a strong demand for VSO's to assist in the planning and execution of a recruitment drive, the induction process, setting up or refining administrative systems, planning awards programs, maintaining up to date membership files, or just someone to point the direction through the bureaucratic maze so volunteers can get what they need to do their job.

These localised support services are complemented by several statewide initiatives of the VMB. Once such initiative is the provision of scholarships for the Diploma of Community Services (Volunteer Management). Volunteers are encouraged to undertake the Diploma, which has been developed through a partnership between Volunteering SA and Onkaparinga TAFE. VMB provides sponsorship for volunteers to attend conferences that have a focus on volunteering, with two volunteers recently returning from the 16th World Volunteer Conference in Amsterdam. Many more volunteers have attended local conferences hosted by Volunteering Australia and Volunteering SA. A program of sponsorship to

SAAVA (South Australian Association for Volunteer Administration) is also provided by VMB.

Recruiting resources are also available on a statewide basis as well as locally and include a freecall 1300 telephone number, opportunity for advertisement placement on the 'govolunteer' website, telemarketing and recruiting brochures and posters.

Harnessing the interest of youth in volunteering in emergency services has also been an increased focus in recent times. The appointment of a Youth Programs Officer (YPO) to the VMB serves to develop Cadet programs, train Cadet Coordinators, develop, implement and monitor policies and procedures that will enhance young peoples involvement in emergency services and provide pathways to volunteering as an adult. The intent of Cadet programs is to provide safe, structured and enjoyable experiences for young people as they move through their cadetship. This in turn will encourage more young people to value the experience of volunteering in emergency services, demystify the services for them and encourage continuation of their involvement as adults.

In conclusion, it appears that with the increasing demands on volunteers to lead and manage their teams in a professional manner amidst a rapidly changing environment, support services such as those provided by the VMB are now, and will continue to be, essential to volunteers. This is a new approach to many volunteers in CFS and SES and can be considered part of the long-term change process.

The change process often takes many years as the culture of the services grapples with new ideas and different ways of achieving objectives.

Support services such as Volunteer Management, OH&S and Risk Management will develop and grow in line with changing needs and demands and will continue to compliment existing services that enhance the operational side of the volunteer opportunities.

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This article has been refereed

Missed opportunities:
NGOs and the United Nations International Decade for Natural Disaster Reduction

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Introduction

The 1980s put natural disaster mitigation and preparedness onto the international aid agenda. A succession of severe disasters—from the 1982-4 famines in the Sahel, the Horn of Africa and Southern Africa to Hurricanes Gilbert and Hugo in the Caribbean in 1988-9—were strong reminders of the power of natural hazards.

The relationship between human actions and the effects of disasters—the socio-economic dimension of vulnerability—was increasingly well documented and argued (Cuny 1983; Wijkman and Timberlake 1984; Maskrey 1989; Anderson and Woodrow 1989/1998).

International concern about these questions led to the creation of the United Nations (UN) International Decade for Natural Disaster Reduction (IDNDR) which ran from 1990 to 1999 (UN General Assembly 1987). The International Framework of Action launching the IDNDR, approved by the UN General Assembly in December 1989, set the international community the objective of reducing the impact of disasters through 'concerted international action', with the twin goals of:

- improving each country's capacity for dealing with the problem
- devising appropriate guidelines and strategies for applying scientific and technical knowledge.

It called on governments to take a series of actions, of which the principal ones were to:

- formulate national mitigation programs
- take part in the concerted international action
- establish national committees
- encourage support from the public and private sectors
- increase public awareness of risk and the value of preventative measures (UN General Assembly 1989).

NGOs in development and disasters

NGO[1] activities form a significant part of development and relief work in developing countries. In 1993 there were an estimated 4,000 non-governmental development organisations based in Organisation for Economic Cooperation and Development (OECD) countries, spending almost $3 billion a year and working with or alongside 10,000–20,000 developing-country NGOs who, in turn, assisted up to 100 million people (Edwards and Hulme 1992, p. 13).

In 1995 development NGOs were reckoned to be spending $7–10 billion a year, compared to $55 billion in official development assistance from OECD governments (Smillie 1995, p. 14). The proportion of official aid channelled to and through NGOs increased from 0.7% of OECD aid in 1975 to 3.6% in 1985, and at least 5% in 1993/4. With donors and the UN now relying heavily on NGOs as implementing partners in humanitarian operations, NGO capacity has also be come crucial to the functioning of the international relief system (Borton and Macrae 1997, p. 45; Hendrickson 1998, p. 16).

The NGO sector's increasing popularity with governments and official aid agencies is partly a response to recent shifts in development thinking—the so-called 'New Policy Agenda' based on neo-liberal economics and liberal democratic theory that endorses the retreat of the state (Edwards and Hulme 1996, pp. 4-5; Wallace *et al.* 1997, pp. 13-25).

But the sector's rapid growth worldwide in recent decades is also due very largely to the widespread *perception*—among aid and development professionals, academics, donor agencies, governments and the public—that NGOs are particularly effective in running development programs.

A variety of features are normally cited to justify this perception, which can be summed up as follows:

- NGOs choose to work with and on behalf of those most in need: the poorest and most vulnerable
- they work at the grass roots, with communities and local organisations as partners, and take a participatory approach to development planning; this ensures that they respond to the priorities of local people and build on local capacities
- their sense of responsibility to their partners encourages them to make long-term commitments to those they help
- their operational flexibility, relatively free from bureaucratic structures and systems, enables them to respond and adapt quickly and easily
- NGO operations are relatively cheap and cost-effective, with low overheads
- NGOs are constantly questioning the effectiveness of their approach, identifying emerging issues and attempting new methods, which places them at the cutting edge of development thinking and practice
- their culture (at policy and operational level) is collaborative, not competitive; they are keen to share lessons where this will help others
- they attempt to give disempowered or marginalised people a voice in policy discussions with the rich and powerful; their day-to-day work with the people of the South enables them to make links between the 'micro' and 'macro' environments

Similar arguments are used in assessing the value of NGOs' contribution to relief operations.

Brian Neldner, former International Director of the Lutheran World Federation's humanitarian aid program, identifies four

Notes

1. Debates about NGO definition and typology have been lengthy and largely inconclusive. We have used a set of key characteristics as a rule of thumb to determine what constitutes an NGO, based on the NGDO Charter drawn up the Liaison Committee of Development NGOs to the European Union (Liaison Committee 1997) and modified to encompass NGOs in developing countries and those involved in relief. These characteristics include a belief in social justice and serving the interests of communities, a base in civil society, non-profit-making aims, legal identity and accountability to donors and beneficiaries. This approach conforms to everyday usage in relief and development circles. It excludes universities and other academic or research institutions..

main characteristics of NGOs' contribution here:

- they adopt a 'people-to-people approach'
- they are flexible operationally
- their inputs are pragmatic and task-oriented
- they can respond promptly (Neldner 1996, pp. 27-29).

A report to the Government of Nepal in 1990 argued that the NGO sector should be mobilised to deliver relief because 'most NGOs operate at the grass-roots, and are better equipped in terms of superior training and organisation to impart immediate relief' (King Mahendra Trust/ Interdisciplinary Analysts 1990, pp. 69-70).

A number of commentators have encouraged or endorsed NGO involvement in natural disaster mitigation and preparedness (DMP) for similar reasons. For example, APRODEV, a network of the major European NGOs associated with the Protestant churches, maintains that there is a wealth of experience among developing-country NGOs in dealing with natural disasters and summarises NGOs' comparative advantages as follows:

> Because NGOs have direct links with the grass roots in developing countries, they can easily identify potential threats and vulnerabilities, as well as mobilise people's capacities. NGOs are therefore particularly well placed to support local initiatives (often with very small costs) to prepare for, or mitigate the consequences of, disasters (Zomer 1997).

A similar formulation has been put forward by two other major European NGO networks, VOICE and EuronAid (VOICE-EuronAid 1998).

Their perspective is shared by donors. The OECD Development Assistance Committee's guidelines on disaster mitigation ascribe important roles to both NGOs and the community-based organisations (CBOs) that they support. CBOs, the guidelines state:

> can raise awareness of the hazard risks at the local level and mobilise the community or groups within to take steps to reduce their vulnerability either through local structural measures, and by pressing for central government involvement in larger structural measures or through the development and introduction of adaptive or preparedness measures ... There are numerous instances of such schemes developing spontaneously, without external support.

NGOs are important because of their involvement in relief programs and ability to support CBOs (for example, they are already assisting CBOs with small grants, providing technical advice and exchanging information between CBOs facing similar hazards).

NGOs are also 'often well placed to test, develop and disseminate innovations which may substantially reduce vulnerability at the community or household level.' The document suggests that donors could support such NGO work and encourage NGOs to become involved; it also recommends that NGOs be encouraged to take part more in official committees and task forces (OECD-DAC 1994, p. 19)[2].

NGO involvement in DMP is difficult to chart, even though 'The relationship between disasters, relief and development represents one of the major recurrent themes in the history of private foreign aid.' (Clarke Guarnizo 1991, p. 50)[3]. NGOs have always made significant contributions to disaster relief efforts.

"Because NGOs have direct links with the grass roots in developing countries, they can easily identify potential threats and vulnerabilities, as well as mobilise people's capacities."

Many of the best known NGOs were started in response to humanitarian crises. The institutional separation of relief and development programs, beginning in the 1960s and gathering pace in the 1970s, discouraged NGO activity in DMP, but by the mid-1980s, with the experience of the famine in Africa and other disasters in mind, NGOs were beginning to look more closely at the links between disasters and development. As early as 1983 Cuny could write: 'The growing awareness by volags [voluntary agencies] of the connection between disaster response and development is the single most important trend in disaster programs today' (Cuny 1983, p. 257). By 1990, with the added impetus of the IDNDR, one might expect disaster mitigation to have been placed firmly on the NGO agenda.

Evidence in the literature for NGO commitment to DMP in the 1990s is elusive and contradictory. There are positive and negative examples of the extent and quality of NGO involvement (Twigg *et al.* 2000, pp. 3-4, 21-23). Research on this subject that we have recently completed in five countries indicates considerable variations in the type of work undertaken, approaches adopted and their effectiveness in reducing risk, the extent to which DMP is systematised within NGO operational systems and structures, and the degree to which it is integrated with other development and relief work by NGOs and other actors.

NGO DMP activity appears generally to be on the increase but it still tends to be unsystematic and the ideal of mainstreaming mitigation in sustainable development programming remains distant in many cases, especially for rapid-onset hazards (Twigg *et al.* 2000; Luna 2000; Matin and Taher 2000; Rocha and Christoplos 2000; Shumba 2000a).

NGOs and the UN system

NGOs have played a role in UN development and humanitarian affairs for decades. In the 1990s, though, they became much more involved and their influence on policy and practice grew. This came about because NGOs widened their areas of engagement with the UN system (Donini 1995).

Hitherto, NGOs' links with the system had been of two main kinds. First, the UN granted individual NGOs 'consultative status' to its Economic and Social Council (ECOSOC)[4].

Second, individual UN agencies developed their own working links with individual NGOs. However, NGOs played a marginal role overall. This was mainly because the UN's view of the world was state-centred but it also owed something to UN officials' rather dismissive view of NGOs, and while some UN agencies, such as the United Nations High Commissioner for Refugees (UNHCR), did interact a good deal with NGOs in the field, most had little to do with them.

During the 1990s NGOs became much more active behind the scenes at the annual General Assembly and in formal and informal dialogue with the Secretariat, Security Council and Secretary-General—thereby starting to overcome the strong barriers of mutual disregard and suspicion between UN and NGO staff. They

also played a significant role in the several major international conferences on development held during the decade.

The more than 1,400 NGOs accredited to the UN Conference on Environment and Development (UNCED) at Rio de Janeiro in 1992 had a major role in shaping the conference agenda and building the political consensus behind Agenda 21. This marked a leap forward in NGO influence, and NGOs continued to play important roles in subsequent UN conferences, for example those on women (at Beijing in 1995), social development (Copenhagen, 1995) and shelter (Istanbul, 1996)[5].

At the same time, individual UN agencies, including the Department for Humanitarian Affairs (DHA) and UNHCR, began to hold regular meetings on policy and operational issues with the main operational NGOs in the humanitarian field.

The growth in NGO numbers, the expanding extent of their outreach especially vis-à-vis that of the state, the considerable funds disbursed by and through them, and their power as lobbyists combined to increase their importance in the eyes of UN officials. A report to ECOSOC by the UN Secretary-General in 1998 observed that:

> The emergence of non-governmental organisations as a definitive force in the socio-economic arena presents a challenge to the long-standing view of the States as the exclusive actors in the international system. As non-governmental organisations increasingly participate in the development work of intergovernmental bodies and address areas of primary concern to them, it is inevitable that growing numbers of them will seek an institutionalised channel through which to influence policies and programs at the international level (UN ECOSOC 1998).

NGOs' involvement in international conferences has been seen as their 'entrance' to the deeper contacts they have made with UN organisations (Gordenker and Weiss 1995, pp. 546-7)[6].

The traditional, formal and highly managed system of accreditation to ECOSOC, which is a mechanism for consultation by the UN rather than a forum for debate, has been left behind by these developments and possibly even rendered obsolete, even though the number of NGOs becoming accredited increased rapidly during the 1990s: from 928 in 1991 to 1,356 in 1997 in all categories (UN ECOSOC 1998). Efforts were made to make the process of accreditation simpler and to encourage a wider range of NGOs, especially in developing countries (which were still largely excluded from these new processes of UN-NGO interaction), to apply for consultative status (UN ECOSOC 1996; UN ECOSOC 1998; *Go Between* 1998/9, p. 11).

There are now some opportunities for wider NGO participation in the 'NGO Committees' on a number of issues run under the auspices of the Conference of NGOs in Consultative Relationship to the Economic and Social Council of the United Nations (CONGO): these are open to all NGOs, whether or not they enjoy consultative status (UN CONGO 1998).

Contacts in the field—NGOs as advisers, project partners or subcontractors—also appear to have expanded rapidly in the 1990s. Some individual UN agencies have developed policies and systems for closer engagement with NGOs.

The United Nations Development Programme (UNDP), for instance, did not have a framework for dealing with NGOs at field level before the late 1980s, but in 1993 endorsed a strategy that emphasised the need to include NGOs in its policy dialogues with governments and to support more effective capacity building in NGOs (Donini 1995, p. 431; Uvin 1995, p. 508).

NGOs and the IDNDR

This period of changing relationships between NGOs and the UN system took place at the same time as the IDNDR. However, from its beginning, the IDNDR saw NGOs as peripheral actors, for two reasons.

The first was the UN system's traditional view, explicit in the Decade's terms of reference, that 'the primary responsibility for defining the general goals and directions of efforts undertaken in the framework of an international decade for natural disaster reduction and for implementing the measures that could result from the activities of the decade lies with the Governments of the countries concerned' (UN General Assembly 1987).

The second reason was more specific to the IDNDR itself. It was the belief that significant reduction of disasters' impact could be achieved principally by the application and dissemination of scientific and technical knowledge, particularly to developing countries.

As a result, scientific and technological institutions were to play a leading role in implementing the Decade's agenda (UN General Assembly 1987; 1991; 1993; 1994). This was a narrow base on which to build major improvements in disaster reduction policies, practice and culture, and the lack of 'legal or societal mandate from the citizens and stakeholders' was to be a barrier to success throughout the Decade (Hays 1999, pp. 276-7).

The IDNDR system was dominated from the start by the scientific institutions that had promoted it and offered little scope for NGOs to become involved. The IDNDR's advisory body, the 'Scientific and Technical Committee', consisted, as its name indicated, of 20-25 'scientific and technical experts... selected in consultation with their Governments' (UN General Assembly 1989).

When the Committee was set up in November 1990, only one of its 25 members was from an NGO (the Ethiopian Red Cross Society); the remainder were mostly scientists with a few mem bers from government or international (but still scientific) agencies (*STOP Disasters* 1991, pp. 6-7). The IDNDR also encouraged governments to form national IDNDR committees 'in co-operation with the relevant scientific and technological

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Notes

2. There have been number of variations on this basic theme, from practitioners and policy makers (e.g. Maskrey 1989; Davis 1990; Link ed. 1991: 10-11; Skinner 1992).

3. The following paragraph is based largely on *ibid.* 50-103. We are grateful to Dr Clarke for permission to cite her PhD thesis.

4. Article 71 of the founding Charter of the United Nations in 1945 states that: 'The Economic and Social Council may make arrangements for consultation with non-governmental organizations which are concerned with matters within its competence. Such arrangements may be made with international organizations and, where appropriate, with national organizations after consultation with the Member [state] of the United Nations concerned.' (United Nations 1945). The system of accreditation is based on Resolution 1296 adopted by ECOSOC in 1968. Like Article 71 of the UN Charter, it views NGOs in a legal rather than a functional sense, a view repeated in the revised system of accreditation set out in 1996 (Gordenker and Weiss 1997: 443-4; UN ECOSOC 1996).

5. An evaluation of UN world conferences 1990-96 by a roundtable meeting convened by the German development think-tank the Deutsche Stiftung für Internationale Entwicklung (DSE) in 1996 agreed that NGOs had become more active and significant participants in such events whilst conceding that this was a slow process and that NGOs from developing countries were still largely excluded (DSE 1996).

6. The role of the UN Secretary-General has also been important. Boutros Boutros-Ghali (Secretary-General 1992-6) appears to have been influential in shaping UN attitudes by his open recognition of NGOs' valuable role in shaping international policy and the appointment of NGO staff to his high-level advisory committees (Donini 1995: 423, 425; Ritchie 1995: 521-22).

7. We are grateful to Ms Brichieri-Colombi (née Simmonds) for permission to cite her thesis.

communities' (UN General Assembly 1987). By 1999 there were 141 national committees or focal points. Evidence for their commitment and achievements overall is inconclusive (Simmonds 1999)[7] and information on their membership is not generally available, but their composition probably varied greatly from one country to another. It is likely that NGOs did not make up a significant proportion of their members in most cases, although they may have played a more substantial role in special advisory groups or working groups formed by the committees[8].

The scientific community's view of the Decade was articulated by one of its leading figures, Sir James Lighthill, Chairman of the Special Committee for the IDNDR of the International Council of Scientific Unions, who wrote in the IDNDR's newsletter in 1991:

> To meet the world's objective of a major reduction during the 1990's in acute human disasters due to natural causes, all the nations most threatened need the help of scientists: their own scientists operating as part of the global confraternity of scientists. That confraternity has spent 1989 and 1990 examining ways in which scientists all over the world can work together to combat types of natural disaster which, besides being exceptionally damaging, can be tackled only by a great, globally cooperative scientific effort.' (Lighthill 1991, p. 8).

Where NGOs were mentioned by name in official UN documents during the preparations for the Decade and in its early years, this was within a long list of other actors, with no significance being attached to their role and no comment upon their value (e.g. UN General Assembly 1989; 1993; 1994). It should also be noted that where the term 'non-governmental organisation' appears in UN documents, it is used mostly to refer to *any* organisation that is not strictly governmental, including academic institutions and the private sector.

The first opportunity to change the overall direction of IDNDR came at the World Conference on Natural Disaster Reduction at Yokohama in May 1994, the Decade's mid-term review, where it was hoped that governments and multilateral agencies would join with other sectors such as science and technology, business, industry and NGOs (UN General Assembly 1991; 1993).

There were about 1,500 delegates. The main participants were national governments, which sent 147 delegations of different sizes. Intergovernmental agencies sent 41 delegations.

There were 47 NGO delegations. In addition some NGO staff were part of their countries' national delegations (El-Sabh 1994, p. 334).

The level of NGOs' participation in the Conference and their influence on its decisions are hard to measure (El-Sabh 1994; Davis and Myers 1994).

The conference was organised into three parts: plenary sessions, the main committee and a set of seven technical committees on different aspects of disasters. Of these, the main and technical committees were the active sessions where there was room for debate, but the main committee was the most important in terms of setting international priorities. This prepared the 'Yokohama Strategy and Plan of Action' for the rest of the IDNDR (see below) and received national and regional reports and statements from the delegations.

The Yokohama Strategy and Plan of Action opened the way for greater involvement by NGOs and communities by, for example, noting the need for participation in disaster prevention at all levels from the community upwards and recognising the value of indigenous technical knowledge in mitigation.

It discussed strategies for enhancing interaction between the public sector, private sector and NGOs. The 47 accredited NGOs presented a common statement to the committee which endorsed the general objectives of the IDNDR but called for two main improvements. The first was greater emphasis on the human dimensions of risk and vulnerability.

The second was improved integration of NGOs in UN processes and procedures generally and the IDNDR in particular (El-Sabh 1994, pp. 334-5; cf. Warmington 1995, p.6)[9].

The Yokohama Strategy and Plan of Action did express a shift in emphasis from scientific and technological fixes to wider disaster prevention strategies and capacity building as integral parts of development planning (IDNDR 1994; Simmonds 1999).

This shift may have owed something to lobbying in the months running up to the conference, by NGOs as well as others, although evidence for this remains anecdotal. Perhaps it also owed something to the common statement presented by the NGOs at the event, but the main elements of the conference statement had already been agreed at a preparatory meeting of UN and government representatives in Geneva, and some observers felt that NGO representatives were marginalised at the conference and their voices were not heard (Davis and Myers 1994).

The Yokohama Strategy and Plan of Action opened the way for greater involvement by NGOs and communities by, for example, noting the need for participation in disaster prevention at all levels from the community upwards and recognising the value of indigenous technical knowledge in mitigation. Key principles of the Strategy included:

- giving emphasis to programs that promote community-based approaches to vulnerability reduction
- promoting the involvement of non-governmental organisations in natural hazard management, in particular those dealing with environmental and related issues and including indigenous non-governmental organisations (IDNDR 1994, pp. 10-15).

The Plan of Action based on the Strategy and its principles reaffirmed the commitment to 'genuine community involvement' and traditional skills, but—significantly—was reluctant to transfer any authority to NGOs: here the commitment was merely to 'Consider making use of NGO support for improved disaster reduction at the local level' (IDNDR 1994, pp. 16-17).

Subsequent resolutions on the IDNDR at the UN General Assembly do not reveal any shift in thinking on the role of NGOs (UN General Assembly 1994; 1997). Little changed in terms of NGO representation

Notes

8. Of course, influence is not necessarily in direct proportion to numerical representation. For example, only six of the German IDNDR Committee's 37 members were from NGOs but three of these were from the German Red Cross, which also housed the Committee's Secretariat (Eikenberg 1998: 52-61).

9. Greater participation by and support for NGOs in disaster reduction activities had also been advocated in pre-conference meetings (e.g. DSE 1994: 9-10).

on the IDNDR's Scientific and Technical Committee (two members out of 24 by 1998) although socio-economic and developmental aspects of disasters appeared to be represented slightly better (IDNDR 1998, pp. 39-40).

NGO participation in international IDNDR conferences remained low. For example, at the major conference on early warnings in Potsdam in 1998 only 10 of the 292 participants were from NGOs (EWC 1998).

However, coverage of the work of NGOs became more extensive in the IDNDR's official newsletter, *STOP Disasters*, after Yokohama. The newsletter also gave more prominence to the social and economic dimensions of vulnerability and the links between development patterns and disasters.

There is evidence that the marginalisation of NGOs in the Decade was recognised within the small IDNDR Secretariat in Geneva. In its report on the IDNDR's 1995 world disaster reduction campaign (on the theme of 'Women and Children: Key to Prevention'), the Secretariat noted:

> Above all, every roundtable emphasised the need for stronger links between government and NGOs, particularly at community level. NGOs can be a vehicle to mobilise women or children. These groups, however, need to be consulted in the early stages of project development, and not simply asked to mobilise supporters to carry out various actions after decisions have been made within governments. (IDNDR 1996, pp. 33-38).

The report also recognised that NGOs and academic institutes 'have not always been adequately targeted by the Secretariat or national IDNDR organisers, and hence the overall numbers in these categories remain low' (IDNDR 1996, p. 3).

The International Programme Forum held in Geneva in July 1999—the IDNDR's closing conference—produced a 'Strategy for a Safer World in the 21st Century' that revealed the international community's position five years after Yokohama. This admittedly short document put out the now conventional rhetoric about greater public participation and increased partnership and coordination in general, and did not discuss the particular roles of different institutions. Its position on responsible parties hints at a shift in attitude since Yokohama:

> Governments have the primary responsibility for protecting citizens from risks and disaster, however, local communities and elements of civil society most threatened by hazards emerge as key initiators of important risk and disaster prevention actions. They must work through partnership, and together, receive necessary encouragement and support to realise the vision of disaster resilience. (IDNDR 1999a)

Here, civil society is allocated a more active role in initiating activity although the term 'elements of civil society' is vague, and the implications of this statement for NGOs are unclear. The emphasis in another Forum output, the 'Geneva Mandate on Disaster Reduction' on strengthening mechanisms for regional and international cooperation, also opened up potential space for NGO activities, but again this was not defined (IDNDR 1999b). Elsewhere in the Forum's outputs NGOs were mentioned as providers of helpful educational resources but they did not appear in the brief summary of the conference session on 'partnerships' which was devoted entirely to the potential role of the private sector (IDNDR 1999c).

> 'Above all, every roundtable emphasised the need for stronger links between government and NGOs, particularly at community level...'
>
> -IDNDR Secretariat

The IDNDR and NGOs in the UK

The UK's IDNDR efforts focused on disasters in other, developing, countries. This was an area where British international NGOs could have offered considerable assistance. There are well over 200 British NGOs engaged in relief and development activities overseas, ranging very widely in their size, structures, areas and modes of work.

Over the years, the sector has been involved in a variety of DMP initiatives helping to protect vulnerable communities against major hazards throughout the Third World, even though this involvement has been unsystematic (Twigg *et al.* 2000).

However, the development and scope of the UK's IDNDR effort largely paralleled that of the international IDNDR. The initial impetus was from the scientific and technological community with the formation of a Science, Technology and Engineering (STE) Committee in 1991 sponsored by the Royal Society and the Royal Academy of Engineering.

This remained the UK focal point for the IDNDR until January 1993, when a National Coordination Committee was established with the same sponsors and financial support from the new budget line for disaster mitigation created by the British Government's international aid agency, the Overseas Development Administration (now the Department for International Development: DFID) (Eades 1998).

The establishment of the National Committee was a move to broaden the base of involvement in the IDNDR and it followed a workshop organised by the STE Committee which attempted to identify different facets of the UK disaster community and develop links between them (IDNDR UK 1992). However, throughout its existence, the National Committee was composed predominantly of scientific researchers and engineers, with limited additional representation from the media and consultancies. There were only ever two members from the NGO community, neither long-serving, and by the time the Committee wound up there were no NGO representatives in a membership of 14 (Davis and Westgate 1999, p. 72).

NGOs had a greater voice in two of the seven UK IDNDR working groups, the other five being devoted to scientific and technological interests with members largely drawn from the academic and commercial sectors.

The Drought Mitigation Working Group brought together researchers, scientists and NGO staff, but was not particularly active in the second half of the Decade. The Applications and Imple mentation Working Group, set up in 1994, sought a wide mix of members from government, universities and research institutes, consultancies, NGOs and the insurance sector. It aimed to stimulate 'a series of new initiatives to reduce risks through the work of non-government relief and development agencies' (IDNDR

UK 1994, p. 18). These included an initial consultation meeting for representatives of the disaster management sector as a whole (in 1994), a seminar on community vulnerability assessment (in 1995, which drew participants from across the disaster community), the research and publication of an 'audit' of British agencies and individuals working on disaster mitigation, preparedness and response (Sanderson *et al.* 1996), and the design of a two-year research project on NGO activities in natural disaster mitigation and preparedness (Twigg *et al.* 2000, p. 1).

NGOs did not take much part in many of the seminars and conferences organised by the UK National Committee or its working groups, even where these were designed to appeal to a wide group of interests. For instance, only three NGO representatives took part in the workshop in March 1992 to discuss opportunities for British involvement in the IDNDR, out of a total of 72 participants (IDNDR UK 1992, pp. 35-6).

Only three British NGOs were represented at the international conference on 'Protecting Vulnerable Communities' in October 1993, the most significant conference held by the National Committee, which was promoted as a multidisciplinary event.

Lack of NGO participation was also reflected in the conference papers: most were by scientists and engineers; few looked at the social aspects of vulnerability; and the organisational aspects of disaster mitigation and preparedness were also largely missing, except from a national perspective (Clayton 1994, pp. 89-90).

Only one of the 27 people who attended a meeting in January 1996 to discuss UK IDNDR strategy for the remainder of the Decade was from an NGO (IDNDR UK 1996). Only three of the 66 listed participants at the 'Flagship Programme Conference' on forecasts and warnings in November 1998 were from NGOs (IDNDR UK 1998).

Only five of the 76 listed participants at the UK's IDNDR 'wrap-up' conference in November 1999 were from NGOs: two of these were from the same NGO, and one was from their NGO's consultancy division (IDNDR UK 1999)[10].

The evaluation ('audit') of the UK's IDNDR system and efforts in 1999 found that the IDNDR had not reached out far beyond the scientific and engineering sectors. In focus group discussions held as part of the evaluation 'there was repeated comment on the failure of the IDNDR to penetrate the world of UK NGO's' (Davis and Westgate 1999, p. 55).

	Development staff	Emergency staff	DMP staff	Mixed[12]	Total	%
Had not heard of IDNDR	36	5	0	2	43	57
Heard of IDNDR, no impact on work	12	7	0	4	23	30
Heard of IDNDR, some/possible impact	6	1	2	1	10	13
Total	**54**	**13**	**2**	**7**	**76**	**100**

Table1: awareness and influence of the IDNDR within British NGOs.

Confirmation of IDNDR's exclusive character came from research we carried out into NGOs' activities in natural disaster mitigation and preparedness.

One of the main components of the research was a study of the work of 22 international relief and development NGOs based in the UK (Twigg *et al.* 2000). These were selected to provide a broadly representative sample in terms of their age, size, area and mode of work. Some of those studied were 'generalist' NGOs that addressed many different aspects of development or relief work in developing countries; a few were 'niche' NGOs (i.e. focusing on a particular development sector or issue, or on particular regions or countries).

The researchers met a range of staff within each NGO, including regional programme/desk officers, funding officers, specialist technical advisers (e.g. in the areas of DMP, emergencies, food security, communications or capacity building) and in 14 of the NGOs at least one member of the senior management team. In total, 125 people were interviewed individually using a semi-structured interview process that covered a wide range of issues including policy, organisational systems, field programs, understanding of concepts and terminology, information flows and organisational learning, funding and other external influences.

As part of the study, interviewees were asked what they knew and thought of the IDNDR. As the interviews were semi-structured, the question was not put in every case. A total of 76 people (61% of interviewees) were asked: 54 of them were primarily involved in development work[11], 13 worked on emergencies, two on DMP; and seven had an element of more than one of these areas in their work or background (in six cases this touched upon DMP, or had done so).

The replies fell into three categories:

- those who had not heard of IDNDR
- those who had heard of it but felt it had made no impact on their work
- those who felt it had perhaps made some impact.

The numerical findings are set out in *Table 1*.

Thirty-three interviewees (43% of those asked) had heard of IDNDR. However, a closer look at both the figures and the comments made in the interviews shows that this bare total is misleading as an indicator of IDNDR's outreach and influence. About half of those who had heard of IDNDR worked for, or had worked for, three medium-sized and larger NGOs. Two of these NGOs were significantly involved in emergencies; the other had a formal DMP strategy, and a former staff member there had been active in an IDNDR working group. Several smaller NGOs had not heard of the Decade, and overall only one third of development staff interviewed had.

A number of the interviewees who had not heard of IDNDR clearly assumed from the question that the Decade was about to start and were surprised and even amused when they learnt that it was about to finish.

In terms of impact on UK NGOs' approach to DMP, IDNDR's record is poor. Only 10 interviewees (13% of those asked) indicated any impact but some of these were not sure, and in other cases the evidence was ambiguous and impact could at best be inferred. Only one interviewee felt that IDNDR had affected their thinking on the subject of disaster reduction. One had used it to argue for changes within their NGO but gave no indication that this had led to any positive developments. Two interviewees felt it had been useful in stimulating funding: both worked for the same NGO, which has received significant funds from two budget lines for DMP established during the 1990s, by DFID and the European Community Humanitarian Office (see below). One interviewee felt that IDNDR had been useful in some developing

countries but did not say that it had been useful specifically to that NGO nor to its UK office. Another interviewee felt some IDNDR publications had been useful, and one had fed IDNDR literature into their NGO's environmental work; but again, there was no evidence of any impact. The remainder had been to one or two UK IDNDR seminars or received information.

The comments of those who had heard of IDNDR but did not feel it had made any impact on them fell into four broad categories. Twelve interviewees had heard of it vaguely (i.e. heard the title, seen material a long time ago, might receive publications); three had heard of it vaguely and wondered if it might be a funding opportunity, or may even have mentioned it in a funding proposal; three were critical of UN decades in general; and five were critical of this decade in particular.

The first two categories of reply differ from those replies indicating some impact mainly in the degree of vagueness about the subject. The second two categories denote more substantial criticism of the IDNDR approach itself. There was no enthusiasm for UN decades, though an interviewee in one agency felt UN years might work. Critical remarks made about IDNDR in the interviews included 'stunningly boring', 'turgid and technical', and 'it must have been pretty ineffective if people like us haven't been seriously involved'.

Several interviewees expressed, in different ways, the view that IDNDR had focused too much on high-level principles and the technical aspects of hazard and as a result had failed to engage with field-level practitioners and the needs of vulnerable communities. These views of the Decade give us some insight into the reasons why British NGOs did not become involved. Our research identified others. First, DMP has not established itself in the mainstream of NGO work. There is a good deal of DMP activity in the field but it tends to be *ad hoc* and is not institutionalised within organisational planning systems and operational guidelines.

There are encouraging signs of changes at policy level—largely as the result of several major natural disasters since 1998—but institutional bottlenecks will have to be overcome before DMP is 'mainstreamed'. Perhaps the most important of these bottlenecks is the very heavy workload of operational staff, who are too busy with their ongoing concerns to reflect on or absorb new ideas. This, coupled with high levels of staff turnover, has hindered organisational learning and we saw that institutional memories were weak. We found that NGO staff were put off by the formal terminology of disaster mitigation (finding it too academic), that books and academic journals are not widely read, and that staff tended not to go to formal conferences and seminars. Efforts to raise awareness and understanding of DMP issues among NGO staff must recognise these factors if they are to succeed, and they must prepare and target information accordingly (Twigg *et al.* 2000).

The UK IDNDR National Committee woke up to the importance of wider communication with disaster professionals rather late in the day. It preferred conferences, seminars and research reports as media for disseminating information.

These are the main sources of information for the academic community but, as we have seen, they do not suit NGO workers. The National Committee did not produce a newsletter until late in 1996 and its uninspiring website was established only in 1998. Like the website, the newsletter, *At Risk*, was intended primarily to publicise the work of the National Committee and its working groups—although because this approach led to a shortage of good-quality copy, the newsletter's editor had room for manoeuvre regarding contents and as a result published several items on NGOs' work or of interest to them. However, only five issues were produced before the National Committee disbanded in 1999. (IDNDR UK 1996-1999).

The IDNDR and NGOs in developing countries

More detailed research is needed to find out how IDNDR affected NGOs in other countries but evidence collected by two of the other studies in our research project indicate that the UK National Committee was not alone in failing to reach out to this sector.

Both studies were of NGOs in developing countries severely affected by disasters, with an active NGO community many of whose members were engaged in disaster work.

The Zimbabwe study, which concentrated on NGOs known to be involved in disaster reduction (principally drought) found that IDNDR's influence on NGOs had been 'negligible'. Fourteen senior and specialist staff, from nine NGOs, were asked about IDNDR: five had not heard of it; nine were aware (from reading or hearing it mentioned in workshops) but had not been involved—none of these nine interviewees stated that IDNDR had influenced their thinking in any way and five of them stated categorically that it had not (Shumba 2000a; Shumba 2000b).

The Philippines study interviewed 33 people in 10 NGOs, again focusing on organisations working on disaster management to some extent. It found that 19 (58%) had not heard of IDNDR while three (9%) had heard something about it but claimed they were not familiar with it or had not done anything as a result of it. However, the remaining 11 (33%), from five NGOs, had participated in IDNDR initiatives—by taking part in international conferences and carrying out public education work in connection with it; two of the NGOs appeared to have been quite active (Luna 2000).

Further evidence comes from interviews with 11 senior and middle managers in 11 NGOs in the State of Gujarat in India, which is also prone to a variety of hazards including repeated drought (these interviews did not form part of our study but did draw on our approach). Ten NGOs were development agencies but all were involved in disasters in one way or another—principally in occasional relief activity but some in food and water security.

The final NGO specialised in DMP and it is noteworthy that the other organisations had professional links with it in some shape or form. Perhaps reflecting this, all of those interviewed were aware of IDNDR, but eight were aware only generally. Three claimed to be very familiar with its aims and plans but in two of these cases other interview evidence cast doubt on this. Eight were positive about the Decade but some responses were vague

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Notes

10. There were certainly much higher levels of NGO participation (as speakers and in the audience) at the two seminars organised by the Applications and Implementation Working Group mentioned above but attendance lists for these have not been preserved.

11. In some cases – for example, desk officers – they might have occasional involvement with emergencies.

12. staff involved in work encompassing elements of emergency and development work, or with an element of both in their work background.

13. We are grateful to the Disaster Mitigation Institute for sharing the results of its research with us.

14. Exact expenditure from year to year is not always clear. DFID expenditure statements from 1996/7 to 1998/9 show an allocation of £1.75 million per annum for disaster preparedness (Davis and Westgate 1999: 70).

15. Davis and Westgate (1999: 65-71), analysing this budget's spending between 1993 and 1999, estimate that NGOs of all kinds (i.e. not just British) received £3.744 million, just over 44% of total expenditure. However, this figure includes some projects where NGOs were not the grant holders although they were partners or beneficiaries.

and suggested that interviewees were talking about its potential rather than its achievements. Seven NGOs stated that IDNDR had been influential in raising awareness and providing new insights but only one was active in IDNDR initiatives (Disaster Mitigation Institute 1999)[13].

The IDNDR and NGO funding

DMP has always been marginal to funding policy, even to disaster funding policy, with obvious consequences:

> There is a widely shared view among humanitarian agencies, particularly the private, non-governmental organisations (NGOs), that reliable up-front funds for preparedness are lacking. In essence, donor procedures have placed the burden on the agencies to raise the necessary 'risk capital' for building preparedness systems. Yet the voluntary basis of the income with which most NGOs meet their core costs makes it extremely difficult to make sustainable investments in preparedness (Center on International Cooperation 1999).

Indirectly, the IDNDR has had some influence on British NGOs' work on natural disaster reduction by stimulating the creation of two significant budget lines. The first of these is DFID's budget for disaster mitigation and preparedness which was established in 1993 and spent approximately £2 million annually during the rest of the decade[14].

Between 1993 and 1998, some £2.4m was awarded to eight British NGOs for 14 DMP projects overseas[15]. The second budget line is the European Community Humanitarian Office (ECHO) disaster preparedness programme, launched in 1994. Between 1994 and 1998, it awarded grants totalling 11,431,000 ECU (52% of the programme's total expenditure), to NGOs' DMP projects; this included grants totalling 2,412,900 ECU to seven British NGOs (Twigg *et al.* 2000, pp. 107, 111-12, Appendix 2). We found from the interviews with NGO staff that the availability, or potential availability, of funding for DMP has been a major factor in encouraging some British NGOs to start work in this area. However, both DFID and ECHO appear to be reducing their commitment to DMP, and it seems likely that DMP work will be left to geographical departments to fund out of their emergency and development programs. In both cases, the move is likely to lead to the further marginalisation of DMP. These developments have followed quickly upon the IDNDR's close, and a senior DFID official admitted informally to one of the authors that its financial commitment to DMP had been essentially token because of the need to make a gesture towards IDNDR.

Future trends

It is still too soon to judge how the IDNDR's successor in the UN system, the International Strategy for Disaster Reduction (ISDR), will work with NGOs, but early indications are that it will continue along the same path. Opportunities for NGO participation in high-level decision making remain limited, as shown in the composition of the inter-agency Task Force for Disaster Reduction which will be 'the main forum within the United Nations for continued and concerted emphasis on natural disaster reduction', providing advice on strategies, identifying gaps in policies and programs and recommending action, ensuring complementarity of action by agencies, and convening expert meetings. Its 24 members were meant to include eight representatives of civil society and NGOs designated initially by the IDNDR's Scientific and Technical Committee, but only one of the 22 members present at the Task Force's first meeting in April 2000 — the International Federation of Red Cross and Red Crescent Societies — is an NGO: the rest are UN agencies, regional bodies, government departments, scientific institutions and the private sector (UN General Assembly 1999; ISDR Informs 2000, p. 5).

> The IDNDR, which was intended to overcome such obstacles, has in fact maintained them as far as the involvement of NGOs is concerned... Exclusive institutional structures, be they at international or national levels, are no solution to the problem of reducing the impact of natural disasters: they are part of the problem itself.

In the UK, the IDNDR's successor structure is the Natural Disaster Reduction Committee, a new standing committee of the Hazards Forum, an association of engineering institutes and similar bodies set up to promote professional and public understanding of risk and ways of reducing it. At the time of writing the members of the new Committee — membership is by invitation — are drawn almost entirely from the old National Coordination Committee for the IDNDR. NGOs are not represented; disaster management, social science and developmental perspectives are also largely unrepresented. However, the Committee does aim to be broadly representative of UK interests in natural disaster reduction, recognising the need to establish relationships with, and encourage the involvement of a number of groups including NGOs (Hazards Forum Natural Disaster Reduction Committee 2000).

Conclusions

Throughout its history, IDNDR had to admit its own under-achievement. The formal statement of the mid-term Yokohama Conference referred to 'the meagre results of an extraordinary opportunity given to the United Nations and its Member States' (IDNDR 1994, p. 7). Addressing the Decade's closing conference in Geneva, UN Secretary-General Kofi Annan conceded that 'the number and cost of natural disasters continue to rise'. He also pointed to one of the main obstacles to progress: 'We know what has to be done. What is now required is the political commitment to do it.' (IDNDR 1999d). The remark appears to have been directed at the international donor community and national governments, but it can also be applied to the disaster 'community' itself — i.e. those who are professionally engaged in efforts to prevent disasters and deal with their consequences. Like most communities, this one is not homogeneous. It consists of a diverse range of professional disciplines and organisational types. Disasters are complex problems demanding multi-disciplinary, institutionally co-ordinated solutions, but they rarely get this. All too often, the disaster community is characterised by fragmentation along disciplinary and organisational boundaries, a lack of dialogue and understanding between different actors, and a culture of competitiveness and professional rivalry that is fuelled by competition for funds (Twigg 2001).

The IDNDR, which was intended to overcome such obstacles, has in fact maintained them as far as the involve-

ment of NGOs is concerned. This can only be viewed as a great opportunity missed. Exclusive institutional structures, be they at international or national levels, are no solution to the problem of reducing the impact of natural disasters: they are part of the problem itself.

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Conflict over causation of catastrophe

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Introduction

A stress/trauma assignment in the Cook Islands raised questions about the effect of certain Christian belief systems on a small community in the immediate post-impact period of recovery from a devastating cyclone. To a trauma psychologist with religious convictions it suggested that the specific attributions the clergy made for the cause of the calamity were inappropriate and anachronistic. The topic will be opened up, its antecedents traced, and the implications explored. At issue is the validity of moral transgression being used as the cause of natural disaster, when tenable and well-attested scientific alternative explanations were available. It is a contentious matter that academics, practitioners and emergency workers, as well as theologians and the practicing clergy, might care to ponder.

Although the matter came to the fore from observations in the Cook Islands, it has been known to arise after disasters that have occurred elsewhere. Following the Mt Erebus air crash (Taylor & Frazer 1982) for example, at least one health professional and one detective working in the Auckland mortuary ascribed the tragedy to the people of New Zealand having departed from the paths of righteousness. Others clutched at metaphysical straws to account for having by chance avoided going on the fatal flight themselves, and a few were tantalised with feelings of guilt for having encouraged their friends to take the trip. Then in the south of Italy many of the local population attributed a widespread and destructive earthquake to God expressing His displeasure with them.

Subsequent assignments in Tuvalu and Fiji showed variations in the kind of interpretation that members of different religions gave after calamities (Taylor in press). From this it does seem that human beings have a general need to ascribe meaning to events that have occurred, and that religion provides a ready source of explanations that some of the clergy apply implicitly and others use with discernment. The former are reluctant to ascribe events to chance, and even when valid alternatives are available they are not averse to accepting irrational and sometimes punitive explanations. In doing so they risk perpetuating ignorance, and they add to the burden of suffering of casualties at a time when support and inspirational leadership is required in abundance to promote recovery.

The argument is that religious explanations for catastrophe, like any other, should not be regarded as sacrosanct but be examined in the light of the prevailing knowledge of alternatives. With that in mind this article will look further into the matter with regard to Christianity. Other disaster practitioners might care to follow suit and consider the kind of explanations propounded by different religions for their followers.

The particular event

Tropical Cyclone Martin struck the northern group of Cook Islands on the afternoon of Saturday 1st November 1997. It had the greatest effect on Manihiki, a circular string of remote low-lying coral atolls with a population of about 630 settled in the two villages of Tauhunu and Tukau. Eyewitness accounts indicate that the crescendo lasted about 30 minutes, during which time the biggest wave surged above 30 metres. In the ensuing chaos 11 people died, nine were missing, and many were injured. Widespread damage was caused to housing, public facilities and roads, and to the offshore accommodation and equipment relating to a lagoon pearl-fishing industry. Small boats, demolition debris and household contents were cast about and sheets of corrugated iron roofing were wrapped like tape around high trees.

In the aftermath the closely knit community did much to facilitate its survival until emergency help in the form of food, fresh water, shelter and clothing came from outside. It gathered people together in the safest spots, sent out search parties to comb the foreshore and the reefs for the missing, cared for the special needs of the sick and the elderly and organised a daily routine to take care of essential activities (Taylor 1998).

The resident lay preachers of the Cook Island Christian Church, the Latter Day Saints, Roman Catholic and the Seventh Day Adventist played a full part in the commendable community response. But each in turn struck the same discordant note at their daily religious meetings when they obliged their followers to search their souls to discover, disclose and expiate the unspecified sins they were assumed to have committed that brought the catastrophe about. Their joint focus was on the book of *Revelations* rather than on other parts of the Bible that would have given immediate spiritual comfort to the bereaved and the bereft. None regarded the disaster an inexplicable 'Act of God' or a case of *force majeure,* in the sense which commercial insurers use the term. Much less did they consider it a meteorological change wrought by the well-substantiated weather pattern of *El Nino.*

Normally the Christian Churches play an integral part in the daily life of people in the 15 widely scattered communities of the Cook Islands. But in this instance their post-disaster admonitions left the survivors either despondent or angry, according to the extent of their acceptance of clerical authority and their respect for the politicians that echoed the condemnation. The despondent did not question the justice of innocents being sacrificed for the transgressions of the living, although among the 20 fatalities was a clergyman, his wife, young children and others like them whose behaviour particularly was beyond reproach. Nor did they question the enormity of the punishment for any sins that they themselves might have committed. Instead, they accepted the moral condemnation and tried to recollect incidents for which they had to atone. They were under some urgency to respond, because the yearly sequence of tropical cyclones had just begun and there was the prospect of more devastation to come unless they made amends without delay.

The angry rejected the moral impositions. They were a small group that had been educated abroad and were aware of alternative and more empirical explanations to account for the calamity. They avoided the community prayer meetings and mostly kept silent on other occasions for fear of causing disruption during the immediate post-impact period when the community's future was at stake. It was a price they were prepared to pay at the time.

To this health professional from outside the framework, the moral obligation imposed on the survivors in the

immediate aftermath of the disaster endangered their already fragile sense of security and self-esteem. It induced self-blame that was a maladaptive method for coping with continuing trauma (cf. Holahan, Moos, & Schaefer 1997). It reinforced feelings of helplessness, created an extra burden and impeded the recovery of survivors at a time when encouragement, inspiration and support from all sources would have been more likely to help them maintain their desperate existence. It also introduced an element of discord at a time when the community needed to affirm its bonds, share its grief, praise the heroism of its members who endangered themselves to save others and consider its future location.

In response to direct questioning about my personal position at open community meetings in the Cook Islands at the time, I could only say that in all honesty for me there were other more compelling explanations than the religious to account for the cyclone. Shortly afterwards I was able to forward posters on the origin of natural disasters that had been written in several Polynesian languages and illustrated by the Ministry of Emergency Management in New Zealand specifically for the information of some of its urban communities. But later, with distance, detachment, access to theologians and libraries, I took the opportunity to reflect on the historical explanations of religious adversity, before trying to resolve the issue – at least to my own satisfaction.

Historical explanations for adversity

Although explanations to account for catastrophe have long been pronounced, Beit-Hallahmi and Argyle (1997), the joint authors of a most comprehensive book on religious behaviour, belief and experience, made no mention of them. In breaking fresh ground an initial overview would suggest that different explanations for disaster reflect the prevailing educational, experiential and intellectual climate of the times in which they were made. The explanations are like myths—defined by McLeish (1996, p.*v*) as providing 'the continuum of identity which allows the community to make sense of everything it experiences or thinks'- except that they are based on either supernatural belief or scientific proof, and sometimes a mixture of both. The first is drawn either from superstition or scripture, the second from observation and verification, and the third from an amalgam when either kind of explanation alone is insufficient to account for the facts as observed. The particular kind of explanation adopted reflects the belief/value system of the advocate.

The ancients had an array of Gods that they perceived to be capricious (Ogilvie 1986). Over time they imbued them with the power of commanding the forces of nature to punish mankind severely for failing to pay proper respects. In Ancient Rome the Emperors required the priests to consult the treasured Sibylline texts to account for the occurrence of droughts, earthquakes, famine, floods, plagues, pestilence and volcanic eruptions. When called upon in this way, the priests had either to give advice about placating one of the existing Gods, or to go abroad to find out about others that inadvertently the populace might have offended.

The early Missionaries found similar Deities being worshipped by South Sea Islanders, and one of them (Ellis1829, vol.1, pp. vii–viii) wrote critically of the people and the practice as follows:

> '(They) appear under circumstances peculiarly favourable to happiness, but their idolatry exhibits them as removed to the farthest extreme from such a state. The baneful effect of their delusions was increased by the vast preponderance of malignant deities, frequently the personification of cruelty and vice. They... regarded their (religious) duties with horrific dread and worshipped only with enslaving fear'.

The Islanders for their part, according to Gilson (1980, p. 32), a sociologist reporting from records much later, regarded the Missionaries as

> 'powerful white chiefs whose supply of valuable articles and fleet of ships seemed inexhaustible, but whose prime concern was that the people should observe special injunctions pronounced by the supreme Jehovah. A breach of these rules made them very sad; when they became sad they expounded on the fate of sinners in the afterworld. *An occasional disaster indicated that retribution might come even sooner'.* (My emphasis).

Such was their power, that the Reverend John Williams and his two local assistants converted the entire population from pagan polytheism to Christian monotheism within the short space of 20 years from the time of their arrival in the Cook Islands in 1821 (Gutch 1974). The conversion retained the punitive rationale for natural disasters, but consistent with the wider teachings of Christianity at the time, construed it as a punishment imposed by God on communities for the moral transgression of their members rather than for any failure to pay respects. The Missionaries hoped that by persuading the islanders to ascribe the power of punishment to a single God rather than to many, and by coming to regard calamities as indicators of His wrath for their iniquities, the converts might also relinquish the practice of punishing each other so severely.

The monotheistic explanation for disasters remained and still remains central to the existence of the Cook Islanders (cf. South Pacific Bureau for Economic Cooperation 1979), although apparently traces of early polytheism are still to be found (Luomala 1984). Yet paradoxically in official quarters concerns have been voiced about global climatic warming and associated sea level changes (Brook, Basher, Bruce, Parsons, & Sullivan 1991, p. 2). The Islands government has also embarked on a five-year planning scheme, set priorities, and improved managerial infrastructures for coping with disasters (UNDRO 1990).

Resolving the discrepancy

While it could be argued that a patchwork of inconsistent explanations for disasters has more appeal than one of consistency, intellectually the dissonance is somewhat untenable and in practice it has undesirable implications. A few clergy from different theological schools agree and they have given pointers to show how the problem might be resolved. For example an Old Testament Scholar Rabbi Michael Abrahams of the Wellington Liberal Synagogue (private communication 18 December 1997) would *finesse* the question by redefining the theological rationale for regarding disasters as Divinely inspired punishments. He suggested that the clergy should give more consideration:

- to God's specific covenant not to harm mankind (Genesis 9:13)
- to God's concern for the spiritual recovery of the wicked and not for their death (Ezekiel, 33: 10)
- to the shift of emphasis in the Old Testament away from corporate guilt for sinful behaviour to that of individual guilt for such transgression.

In their writing other theologians (cf. Robinson and Edwards 1963; Geering 1986) have suggested that the clergy should place more emphasis on inner spiritual growth and redemption through worship than on outward behavioural conformity through fear of punishment. Spong (1991, p.33) would have each generation of the religious re-interpret the world in the light of the knowledge and suppositions currently available.

Geering (1994) would have the myths of creation and catastrophe regarded as stepping-stones en route to the religious existential core of humanity.

Somewhat in advance of such propositions, Douglas (1980, pp. 1234–1237) cited Greta Hort to suggest that with the exception of the death of all the first-born, the ten disastrous plagues of Egypt were linked biologically rather than theologically. He said that they could have been the outcome of a series of events that began with an abnormally high tide that carried fine particles of red earth and micro organisms. According to him these events in turn would have poisoned fish, caused frogs to swim ashore, and bred an abundance of mosquitoes and flies that infected cattle and gave skin rash to humans. The heavy rains that followed would have ruined the staple food crop, caused floods, and made conditions suitable for locusts to breed. The subsequent drought that completed the cycle would have baked the ground, from which a three-day whirlwind would have blown particles of dust about that blocked the light of the sun.

However, a reading of the original paper shows that in making connections between what was thought previously to have been a series of calamities, Hort (1957) herself was seeking simply to establish the historical truth for the actual occurrence of the plagues. She was not trying to offer a biological alternative for the widely held theological explanation for the disasters as forming an 'invincible sequence and growing severity'. No doubt had she done so, she would have created uproar, because in the words of Dr. Nan Burgess, former Lecturer in Pastoral Theology, Knox College, Dunedin (private communication, 9 December 1997), the acceptance of biological accounts for natural disaster would require the clergy to think theologically rather than biblically. In my view it would also require them:

- to think scientifically and to be bold enough to discard redundant explanations
- to allow their findings to percolate through their scriptural teaching
- to admit that they should have expounded such aspects of their previous religious explanations more tentatively
- to work through the implications of value change with their congregations, and support them through the inevitable period of uncertainty that follows any recalibration of basic assertions and assumptions.

Were they to do this, the clergy might reflect on Sagan's (1997) thesis about the inevitable conflicts between irrationality and rationality that have arisen in the development of science. They might also take heart from Tenner's (1996) cautionary tale of the unintended consequences of so-called technological progress, and come to appreciate that the findings of science and technology, like those of scholarship, are not always beyond dispute!

The prospect

The proposition is not too preposterous, because moves have been made recently for bringing a concern for the environment within a framework of religion. Marsh (1991) has even mooted the formation of a 'Down to earth religion', and the influential World Council of Churches (WCC) has recommended that a specific concern for the environment be introduced into Christian theology (Eyles 1993).

Were the WCC to be successful, and go a little further with its authority to revise religious explanations for natural disasters, it might be easier for the Cook Island Churches and other congregations like them to follow suit. Then in times of adversity the clergy might with confidence place less emphasis on punishment and more on compassion. The change of emphasis would repair the apparent rifts in any community on the issue, promote the resilience of vulnerable populations that are obliged to remain in disaster-prone areas of the globe, and remove some of the dissonance between theology and science.

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Foot and Mouth in Britain: the first 60 days—a problem of dystopia?

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Introduction

This paper is written from the middle of a crisis. It is fully accepted that it will be out of date not merely by the time it is read but even by the day after it is posted. As I was starting to put it together, the national press reported the government's chief scientist as saying that the foot and mouth disease (FMD) was 'past its peak', that the government's policy 'will eliminate the disease' and that the average number of outbreaks 'had fallen to 20 to 30 cases per day'. A crisis has been defined as an 'ill-structured situation'. The chief scientist's remarks came on the day after the number of outbreaks hit a near-record level of 41. (Outbreaks, more often reported as 'confirmed cases', are counted by the number of farms, not by the number of animals, affected.)

To suggest that, as with the BSE crisis, the government's scientific spokesman may be speaking in a paid role, may be either a slur or a truism. The author would recommend, having seen the reportage of governmental announcements that BSE was not a health concern, and having heard its chief scientist repeating the message, a degree of caution. To lay a statistical trail in the middle of an ill-structured event may be problematic. And we are indeed in an ill-structured situation. New cases occurring tens of miles from already-infected areas are blamed variously and by varying sources on transmission by tourists, by traffic, by birds and by illicit animal movement. Calls for and against larger (or smaller) scale slaughter and for or against vaccination abound and the government has seemed at various times to be completely against to 'thinking about it' to preparing to vaccinate; though without taking a decision.

A crisis may be ill-structured, but failure to handle it appropriately permits, or even directly leads to, disaster. In the UK, the outbreak is still—with the number of animals awaiting slaughter in excess of a million—reported as a crisis. Elsewhere, it may be seen as having been allowed to escalate to disaster.

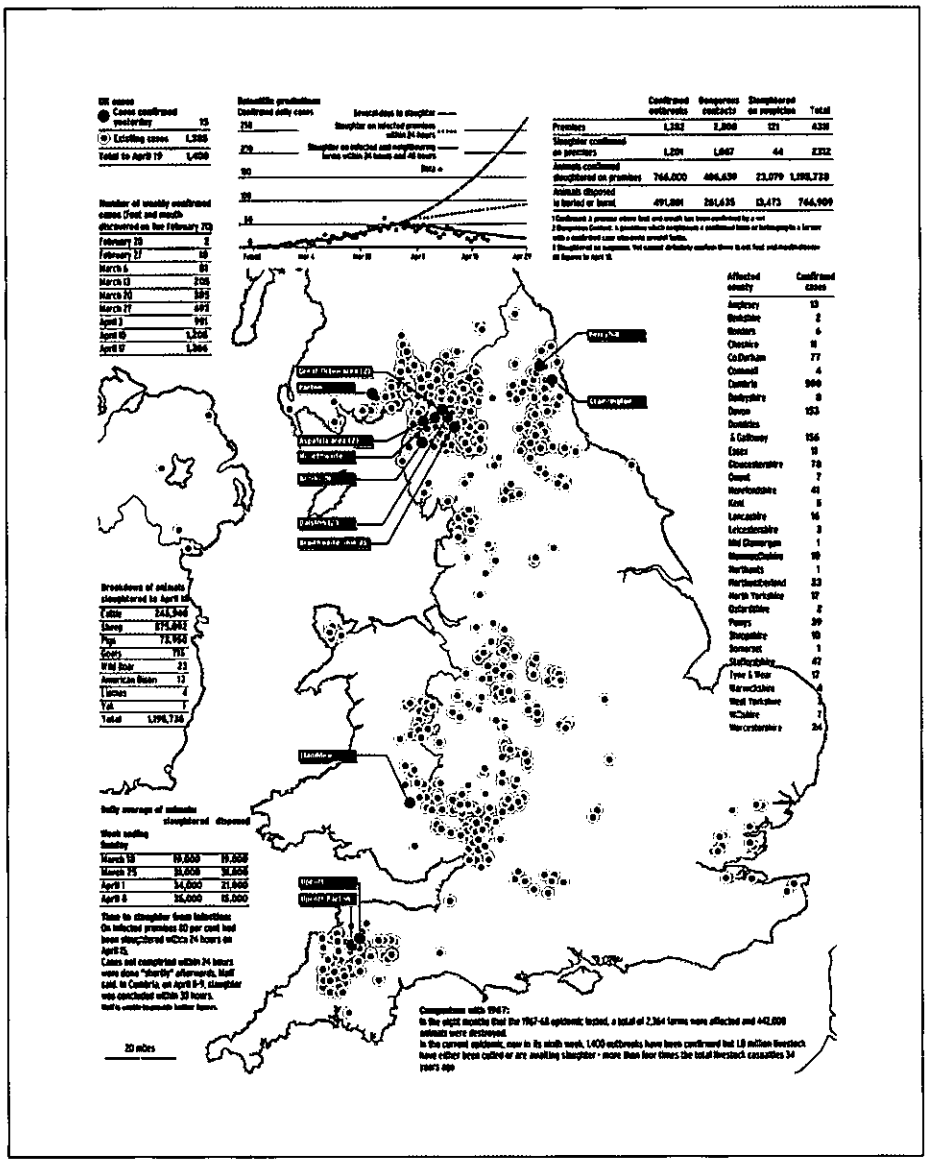


Fig 1: UK, Foot and Mouth distribution at April 19.

Foot and mouth disease

Foot and mouth is a highly-infectious viral disease which affects, by and large, animals with hooves. It is a relatively mild illness causing blisters in the mouth, on the snouts of pigs and on the hoof/leg margin. The blisters eventually burst and secondary infection, particularly in 'dirty 'conditions, may occur. The overall animal fatality (including that from preventable secondary bacterial infection) is around five percent, mainly concentrated on neonatal and very young animals. It also causes temporary drops in milk and growth yields. The extent to which this mortality is primary (due directly to the disease) or secondary (due to infection of tissue exposed through burst abscesses) does not seem to have been quantified.

In addition to affecting hoofed animals (interestingly, excluding horses), the disease can also be transmitted to rats, hedgehogs and (irrelevant in these circumstances but again interesting) elephants.

The virus can be spread by direct, soil or air contact. It can accordingly be carried from place to place by movement of species (including humans) that are not affected

as well as those that are. In those animals affected, there is a two week incubation period between contact with the virus and the appearance of symptoms. This delay period has particular implications for control (see below).

Foot and mouth disease prevention

Until fairly recently, foot and mouth (FMD) was endemic in flocks and herds throughout the world. Attempts to eliminate it appear to have taken a parallel route to the apparently-successful methodology of eliminating smallpox: that is, initially by vaccination and then by declaring disease-free areas. The payoff of this has been the free trading of meat and livestock between certified disease-free areas without herd vaccination and with apparent certainty of safety. This control is regulated by the *Office International des Epizooties*. In order to take part in this free trade, a nation must:

To be listed as an FMD free country or area where vaccination is not practised, a nation must:

- have a record of regular and prompt animal disease reporting;
- send a declaration to the OIE that there has been no *outbreak* of FMD and no vaccination has been carried out for at least 12 months, with documented evidence that an effective system of surveillance is in operation and that all regulatory measures for the prevention and control of FMD have been implemented
- not have imported animals vaccinated against FMD since the cessation of vaccination[1].

Nations in this group, then, will not generally accept animals or meat from nations outside the cordon which have a program of herd vaccination or have endemic disease.

For an island state like Great Britain, this should (perhaps!) have ensured continuing immunity. Regrettably, given the vagaries of international trade it clearly does not. It appears at this stage that the virus was introduced through pigswill, and suggestions for the original transmission vector have included a tourist's sandwich through the (otherwise illegal) importation of cheap non-certified meat by the military or (in what seems to have been a socio-political blunder) Chinese restaurants. The lesson to be learned is that there is an extension of 'no man is an island' to 'no island is an island'.

History of the outbreak

On 20 February 2000 an abattoir in Essex

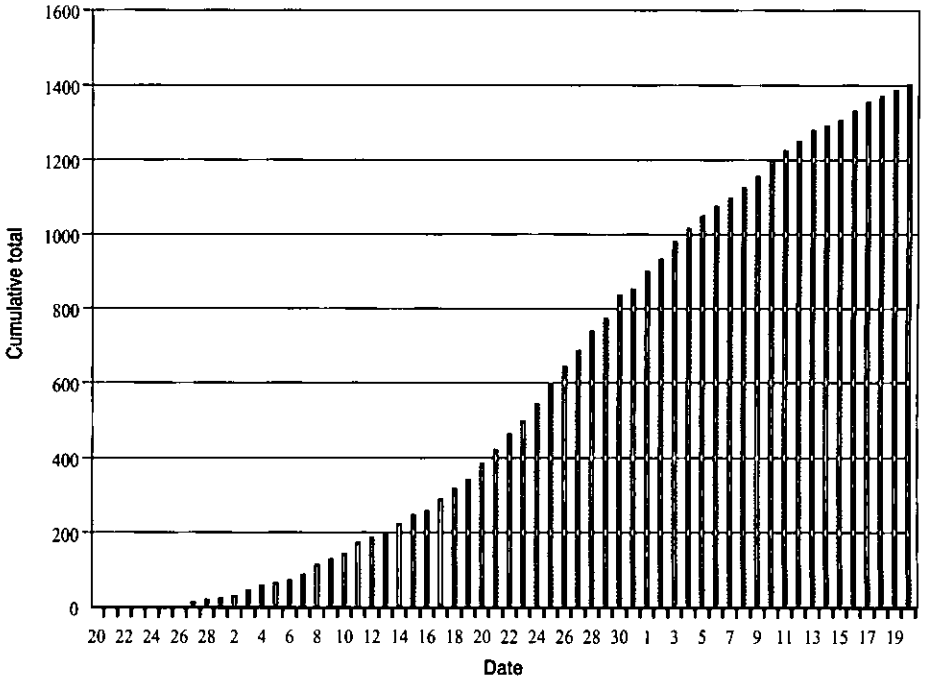


Fig 2: confirmed cases. UK, February – April 2001

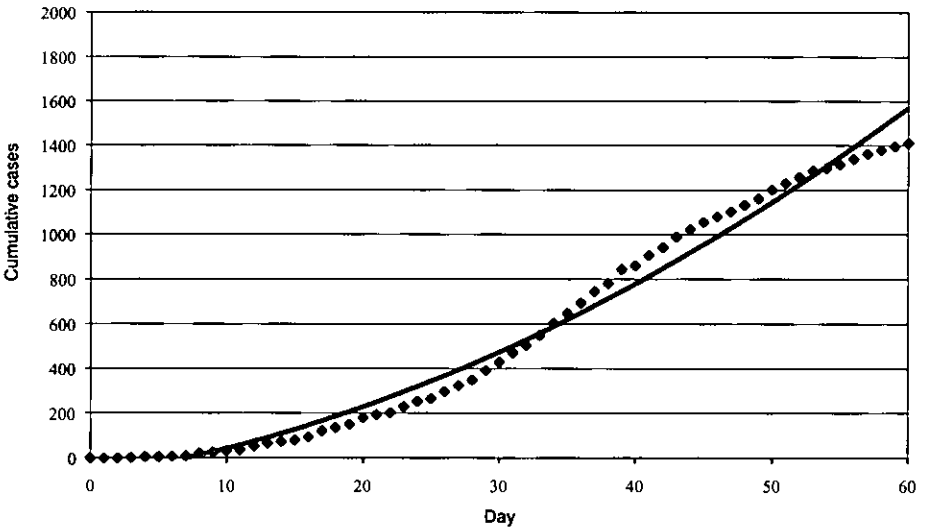


Fig 3: polynomial regression on confirmed cases. Days 0-60.

in the east of England was identified as reporting a case of FMD in animals sent for slaughter. Immediate pointers were to farms either on the Isle of Wight (100 road miles to the southwest) or Buckinghamshire (80 miles to the west).

Ministry of Agriculture, Fisheries and Food (MAFF) announced on the same day that a further suspected case had been found on a farm at Stroud, Gloucestershire—70 miles further west from Buckinghamshire. Within a day, a five-mile exclusion zone in which the movement of farm animals was prohibited had been thrown around the Essex abbatoir. The next day, all livestock movement throughout the country was suspended—initially for seven days.

On 22 February, two days after the initial finding, a piggery on Tyneside—now 300 miles to the north of the abattoir—was fingered as the possible origin of the outbreak.

A week after the initial finding, the number of cases (farms involved) had risen to 22. A week later, it was rapidly approaching a hundred. On 23 March—roughly a month after commencement—it passed 500, and less than a fortnight after this it exceeded a thousand. *Figure 2* shows a cumulative tally of the number of confirmed cases. *Figure 3* superimposes a simple polynomial regression on the figures.

Preventative measures

Severe restrictions were almost immediately placed on non-vehicular move-

Notes

1. Office International des Epizooties: Chapter 2.1.1, Article 2.1.1.2. as at 26 September 2000.

ment throughout England, Wales and Scotland. Footpaths and bridleways in both affected and non-affected areas were closed. General entrance to affected farms was prohibited. At entrances to other farms, and at entrance to rural areas remaining open to the public, disinfected straw mats and boot scrubs were provided. The clear aim of this coupled with restriction of livestock movement was to limit the spread of the disease via human and farm animal vectors.

Early calls for vaccination of farm animals—in infected areas, in a ring around such areas or complete national herd protection—were rebuffed by MAFF and the government. A policy of slaughter of herds on infected farms, coupled with slaughter in immediately-neighbouring holdings, was considered the optimum approach (*figures 4 & 5*). The stated aim was to bring the outbreak under control whilst maintaining the vaccine-free status of the majority of the national herd, so enabling rapid transition back to national disease-free status.

There was some historical precedent in this approach. The last outbreak of FMD in Britain started in October1967. Its rate of spread peaked a month later, with more than 400 farms affected in a week, then the rate gradually dropped. The outbreak was officially deemed over on June 4 of the following year. In the eight months, 2,364 farms had confirmed cases and 433,987 animals were slaughtered. It might have been expected that, given the lessons and experience of that model and experience, a further incidence could and would easily have been contained.

Figures 4 & 5: a policy of slaughter of herds on infected farms and immediately neighbouring holding was implemented. All images courtesy David Burgess.

Problems and limitations of the control measures

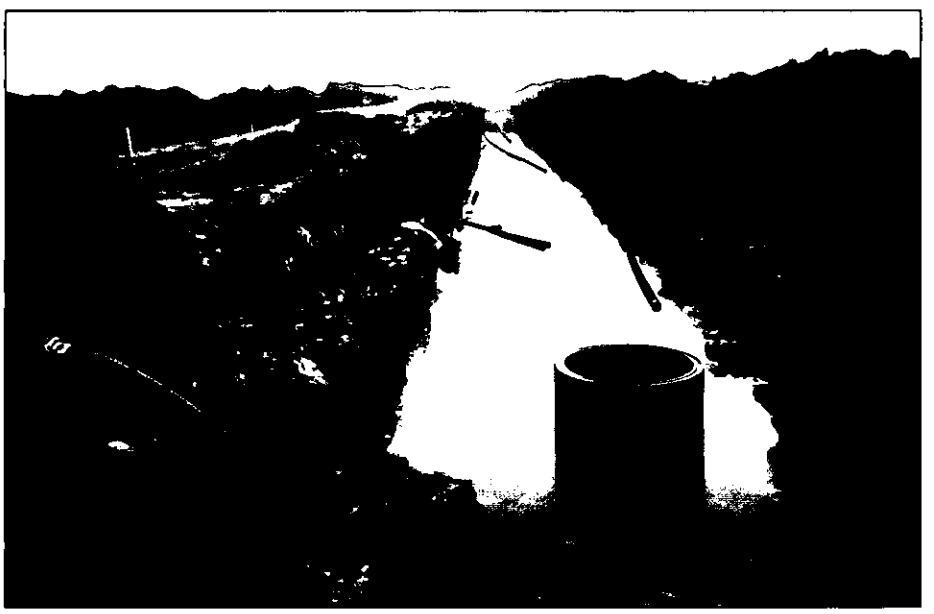
Perhaps the major problem encountered in these control measures has been that the decision on the killing and disposal of sheep, cattle and pigs was taken without apparent regard for capacity. It required a very large number of veterinary surgeons to confirm disease outbreaks, a larger number of skilled slaughterers to kill the animals humanely and a rapid means of disposal of the carcases. The lack of adequate numbers in the first two cases resulted in a failure to slaughter affected and neighbouring herds within the required twenty-four and forty-eight hours of onset respectively. The limited availability of slaughterers was made worse by a further, and probably unforeseen need.

This compounding problem was that the disease hit when pregnant ewes were on winter pasture—on moorland above, or sometimes on fields hundreds of miles from, their home farms. This was not suitable for lambing, or in some cases capable of maintaining the stock. They could no t be moved without a licence, and licences were restricted to movements of only a few hundred yards. The only remaining alternative was a further mass slaughter. By early April, there was a backlog of 350 thousand condemned animals awaiting slaughter for disease control, whilst requests for movement-restriction slaughters had risen to almost a million sheep and over 300 thousand pigs.

Despite early involvement of military assistance, disposal of the dead presented a similarly severe problem. Strategies of burning, of burial and of rendering have all been implemented but, again in early April, the number of carcases awaiting destruction had risen to 400 thousand. Again the problem was compounded. In the case of at least two mass graves, in Durham and in Wales, it was reported that the bodies would have to be dug up again because of the risk of pollution of the water table (*figures 6 & 7*).

It may fairly be said that the control measures were insufficient to prevent disease spread. In some cases they may also been of dubious value. Starting from the last observation, it seems clear that piles of dead animals left in the open should be regarded as probable centres of infection for disease spread, notably via the rat and carnivorous bird routes.

Restrictions on non-vehicular traffic have in some cases been criticised as overreaction and in others as insufficient. In the first case, many local authorities reacted by closing all non-urban (and even in some cases urban!) paths. In my own village, a path leading from a main road by the side of the church and between



Figures 6 & 7: mass graves were used, but in at least two instances, in Durham and in Wales, it was reported that the bodies would have to be dug up again because of the risk of pollution of the water table.

industrial buildings down to the factory estate was closed, though there were no fields or animals bordering it. In another case, a friend reported that a canal towpath running through the centre of a nearby town was closed. A maximum penalty of £5,000 ($A13,750) for ignoring closures was imposed. Notices were placed at the path entrances, and plastic 'incident tape' was strung across them as a further reminder. Over the two months of the outbreak, this tape has been torn down in many areas where the footpaths clearly present no threat to vulnerable animals. Interestingly, no case of prosecution for infringement of these particular regulations seems to have been reported.

On the other hand, the continuance of all traffic on roads running alongside and through livestock areas brings into question the entire concept of closure. Vehicles can clearly carry, drop and spray mud over very large distances. Whilst many farmers have moved their vulnerable stock away from roadside fields, this has not always been possible (and there is still in any case the problem of rat and passive infection-route spread). And as has already been noted, sheep graze on open moorland in upland areas. Roads running through this moorland have, in general, not been closed. The risk of infection being carried to these animals must be regarded as very high; it is probably more surprising, then, that there has been a generally low, isolated and sporadic spread of infection amongst such flocks.

The political imperative

In many respects, the crisis can be seen as a political one. Britain does not (outside of occasional belligerence) encounter large-scale physical disasters. As a relatively isolated, geologically and climatically stable island mass, it is seen as immune to the more massive disasters occasioned by earthquake, flood, hurricane and tornado experienced elsewhere in the world. Perhaps for this reason, perhaps because of the traditional resistance to change of the administration, there is no experienced national disaster coordinating body[2].

This is a very weak position for a government to find itself in. The experts are scattered, 'out there' and not necessarily friendly with each other or predisposed toward governmental priorities.

The government has found itself in a weak position also because of the fiascos surrounding its handling of (most recently) the GM foodstuffs controversy—where it initially supported, and then was forced to back down from, a pro-cultivation policy. Earlier administrations' (and scientific advisors') mistakes on BSE and 'salmonella-in-eggs' add to its problems. There is now (for the UK) an unusual public willingness to question and to criticise handling of, particularly, agricultural crises. So throughout the crisis, the government has found itself on the defensive. By demonstration of this, it has found itself in the unusual position of having, despite maintaining an unassailable labour lead, to postpone the general election.

Being in a defensive position is not the best environment for managing a crisis situation. There is a need to be seen to be in charge of the situation—as Perrier discovered when they had to withdraw every bottle of its sparkling mineral water, worldwide, in 1990 and was subsequently swallowed up by Nestlé. A political imperative, then, has been to demonstrate seizure of control of the situation. Hence perhaps a maintenance of early stances on control-without-vaccination and other seemingly dubitable measures. Allied to this has been an international imperative of appearing to control the situation. This need has again been enhanced by failure to control BSE in the early stages. In that epidemic, the advisable early step of culling infected cattle and placing adequate restrictions on meat sales was replaced with a 'wait and see policy' that

Notes

2. For a critique of this position see, for instance, Rockett JP (1994) 'A Constructive Critique of United Kingdom Emergency Planning' in *Disaster Prevention and Management* vol.3 no.1, Bradford: MCB University Publications and Rockett, JP (2000) 'Wither Emergency Planning? A Deconstruction of UK Emergency Preparedness' in Bristol Business School Teaching and Research Review, No.2, at www.free-press.com/journals/trr/ls2-cont.htm.

made the situation far worse than would otherwise have been the case. This time around, international standing may best have been seen as being maintained by 'taking the situation in hand' with immediate culls.

A further complicating factor is the political power of the farming industry in the UK. Despite its low economic input (see below), it has a disproportionate lobbying influence on political parties of all persuasions. This has perhaps most recently been demonstrated by the government's delay and effective withdrawal from implementation of its electoral promise to ban foxhunting—the Bill being finally brought forward when an election was pending, when it was known that the House of Lords would not accept it and when it would accordingly run out of parliamentary time.

This power of the farming lobby is in part traditional—the National Farming Union (NFU) has a large membership and very adequate funds. However, the focus of concern has changed as small landowners and tenant farmers have become poorer, leaving a siuation in which the majority voice is that of the very large (and accordingly very rich) landowners. These are people who both have influence and can supply (or withhold) large amounts of funding to political parties. Where there is a conflict between small sheep farmers (whose market may be mainly internal and who will therefore want their flocks protected) and large pedigree herd owners (whose market is largely external and who would therefore stand to lose considerable income through inability to sell abroad), the voice of the latter is more likely to motivate the views of the NFU.

Accordingly, the NFU has been consistently against immunisation; and the government has again consistently, until very recently, upheld that view.

What has also become clear during this crisis is the closeness of the NFU not only to the government as a lobbying body but to the Ministry of Agriculture. According to one commentator:

> The union had a team of several hundred experts who had similar mindsets to officials within the Ministry of Agriculture and enjoyed good and regular access to them[3].

This double closeness and consequent effectiveness has been likened to the National Union of Miners setting policy for the energy industry.

Economic factors

Unlike BSE, a disease fatal both to animals and (as vCJD) to humans, FMD is primarily an economic problem. It causes output losses to the farming industry. It is necessary to ask, then, how the financial effects of the disease, and of the effects of the control methodology on the rest of the economy, balance.

The author lives in a semi-rural part of central England. Though he would not claim to be privy to a unique insight, he lives close to a national 'tourist area' and has had opportunity to speak with several of those who are involved in the tourist trade—publicans, hoteliers, restaurateurs, guest house owners. All have seen their trade income massively diminished—perhaps (on a guesstimate) to around ten percent of what might be expected at this early time of the year. Given that the current estimates for spread are from the current half-thousand to a projected four thousand farms and a cull of half the entire herd, it may reasonably anticipated that this level of attrition of the 'tourist' trade will continue, unless preventative measures change, at least summer.

Put bluntly, the farming industry accounts for around 1½ percent of UK national income. The export trade represents a small proportion of this. The tourist trade represents a considerably larger slice of the economy. Though it is accepted that a good deal of this comes from visitors who 'take the tour' of towns and cities (traditionally London, Stratford and Edinburgh), the internal and external markets for visitors to the countryside considerably exceed total revenue in what is a depressed agribusiness. Under EU policy as administered by the UK government, agribusiness has been heavily subsidised, with subsidies going in the main to large landowners. (This is in contrast to France, where small-scale local farming has continued to be encouraged). Such has led to aggregation of holdings and a business elite of powerful landowners who have and continue to dictate farming policy whilst holding a very powerful (perhaps, outside of the Ministry of Defence, most powerful) parliamentary lobby.

Just as inertia and reliance on historical precedent is typical of central government and its agencies like MAFF, the interest of the large landowners is best served by the exclusion of public debate and democratic process. (Large landowners have been at the forefront of opposition in recent debate about 'opening up' the countryside to walkers). Their economic interests are best served through insistence of governmental compensation, at market rates, for slaughtered livestock. Such a policy, which appears at surface level not to differentiate between the 'rich' and the 'poor'—the small farms and the huge estates—in practice plays into the hands of the latter because they alone are able to raise, through their inherent economic power, loans at reasonable rates to see them through the crisis. The almost-certain eradication of a large number of small animal farms is therefore advantageous, and criticism of the governmental policy of slaughter rather than vaccination perhaps understandably muted. Major holdings are more likely to be reliant on export trade.

With impeccable timing, on 21 March, exactly 30 days into the crisis, it became apparent that the Minister for Agriculture was privately disposed to offer a large number of small-scale farmers an 'early retirement' package, concentrating agriculture yet more firmly in the hands of large agribusiness.

Total losses to the farming community have been estimated in the hundreds of millions of pounds. An early estimate of losses to the tourist industry, from the Centre for Economics and Business Research, put the likely figure at around £5 billion. Later estimate by the Institute of Directors put total economic losses at £20 billion[4]. Compensation to farmers for culled animals has been agreed at 90 percent of current market value. A farmer at the centre of early spread through trading has just been awarded a reported £1 million. Compensation to the (primarily small and therefore often marginal) tourist traders has neither been agreed nor given. We return to the political power of the two lobbies.

The situation at day sixty

The sixty-day cutoff for this paper was chosen for no reason other than that a cutoff was needed and it seems to provide a convenient point. According to MAFF figures at that date (20 April):

- 1,412 cases had been confirmed
- 1,294,000 animals had been slaughtered
- a further 513,000 were identified for slaughter
- 264,000 carcases still required disposal.

Curiously, the MAFF website noted on this date that that 'Animals culled in Cumbria in a voluntary sheep cull (250,000) and animals culled in Anglesey (45,000) are not included'.

Notes

3. Rickard, S, quoted in the Financial Times, London, 20 April 2001. Sean Rickard is a former chief economist to the NFU.

4. Brown, D and Clover, C: Daily Telegraph, London, 20 April 2001.

The government, via its chief scientist and with the support of MAFF, is insistent that the disease spread is now under control, and there is some indication from the figures that this may indeed be the case. *Figure 2* certainly seems to show a trend downwards from the polynomial curve. However, caution is needed. The UK remains, by analogy, in a state where a dangerous substance has been and continues to be released into the environment. We *think* we have controlled it, but the parameters of spread control are uncertain.

A complication is that the figures for new outbreaks are necessarily historical. Given the two-week incubation period, they can only show what was happening 'on the ground' a fortnight ago. We can actually have no idea of the current state of spread of disease. All we can say is that it seems to have been reducing two weeks ago. This aspect does not seem to have been acknowledged at all, by the government or the media; 'yesterday's figures' are and have been consistently taken as indicative of the current situation. It is as though we were trying to control a blaze at a chemical works by looking at yesterday's news bulletins. The explosion that happened this morning, killing half the firefighting force, is unacknowledged.

What has gone right?

It may be that spread of the disease has been controlled. From a high daily reported figure in the forties at the end of the first month, daily figures at day sixty have dropped to around fifteen. In this case, the resumption of livestock and meat exports to other disease-free nations may be expedited. What would effectively (with vaccination) have been a two-year hiatus might become a one-year one.

Toward day sixty, the government felt able to lift livestock movement restrictions in an area of the south-east midlands.

Assuming that vaccination remains a pipe-dream, meat and livestock exporters will have been pacified and the government, MAFF and the NFU proved 'right'.

What went wrong?

The methodology utilised was informed by hindsight. It was based on successful control of a previous occurrence. This is 'traditional methodology' — we look at, analyse and learn from past events and utilise that experience to prepare for the next. Unfortunately, it does not appear to have been informed by changes in what is sometimes called the postmodern society.

Markets are no longer 'local'. Not only are they fewer and larger, but they are attended by national and international animal dealers. Animals bought at auction may be shipped immediately to the opposite end of the nation, traded again within days to other parts and in a similar period shipped abroad. In 1967 I could go to my local butcher — at least in rural and semi-rural areas — and find out not only what area the meat I was buying came from, but often even which farm. The nearest I get now is to know which nation provided it. Even if I can find 'local' produce, it is quite likely that the animal was born in one part of the country, raised in another and only fattened at a nearby farm.

The centralisation of abattoirs — in the UK engendered by European Community Regulations aimed at (ironically!) disease control, has ensured that possibly-infected animals must sometimes travel great distances to slaughter. Again where my local butcher would have slaughtered and prepared local produce, he now buys in from an abattoir that may be slaughtering animals from hundreds or, originally even thousands, of miles away.

The overall effect of these changes is that where disease was in the 1960s contained within a relatively small area around the Welsh borders, it is today effectively and actively spread. Animal transport in open trucks further implies the possibility of airborne if not soil-borne contamination on route.

For a disease with rapid onset, this is perhaps not too much of a problem: it can be detected and controlled rapidly. However, FMD with its two-week incubation period (and it has recently been suggested that the period can be much longer) is more of a problem. By the time of detection, we have a relatively long period during which animals have been bought, sold, moved, intermingled and spread. Without a detailed audit trail investigation — which would take several more weeks — we have no way of determining what has gone where, been in contact with what and where these other animals might have gone.

In short, by the time of detection of the disease, it can be expected to have spread throughout the country and abroad. This is precisely the situation we have found ourselves in, and exactly the one that does not seem to have been recognised.

There is a saying that history repeats itself. There is a later assertion that 'history does not repeat itself; people repeat themselves'. That is where we seem to be. Both the Ministry of Agriculture (MAFF) and the National Farmers' Union (NFU) appear to have taken the view that the current outbreak could and should be contained according to previous experience. What they do not appear to have taken into account is that customs, legislation and practice have changed over the period. This is a clear example of dystopia — of difficulty in, of limitations of, of blinkered-vision. What the authorities and the farming community see is what they want to see: an unfortunate and containable outbreak of a transmissible disease. What they are encountering is very different: an unfortunate and, if the same measures are used, *un*containable outbreak. The response is identical, based on history. The circumstances are very different.

What should have been done?

The slaughter policy demonstrably failed. Focus on the historical has resulted in a dystopia — a distortion of vision — that failed to see the present. This dystopia also apparently failed to notice that the tourist business was economically and socially more important than the meat and livestock trade.

In their defence, the crisis caught MAFF and the government by surprise. FMD had been absent for a generation. It was, effectively, unimaginable. Contrarily, the job of a crisis manager is precisely to think the unthinkable: to plan in advance for the event that 'can never happen'. This had clearly not been done and needs doing in the future.

The decision not to vaccinate appears to have been taken on the shaky economic ground that it would hamper the export trade. Although European Regulation was cited, it is notable that when eventually approached the European authorities did not demur from giving consent. Fifty-five days into the crisis, the government appeared finally to be gearing up for vaccination, though only in the heavily-infected areas of Cumbria and (perhaps) Devon; though at day 60 still no decision had been made.

Given the size of the cull even at this stage, it seems likely that holders of unaffected stocks will have their hands full satisfying the domestic market. The export trade at this stage should seem less of a problem. The price of live animals internally will rise sharply with demand — farmers are already suggesting that compensation based on current values will be woefully inadequate to enable re-stocking.

In these circumstances, it is on balance hard to see why vaccination was not immediately employed. The tourist trade would have been protected and there

would have been no need for a cull that may eventually involve half of the farming stock. Compensation would have been far lower and internal markets for meat and live animals would largely have been unaffected.

At day sixty, one can rest assured that a policy of vaccination still brings an apoplectic attack from the larger pedigree breeders who depend heavily on export. However, despite their heavyweight political status it has to be realised that their contribution to exports is considerably less than the cost arising from the mishandling of the crisis. Most of the smaller farmers—the majority in terms of numbers—whose average income has been estimated at a mere £9,000 ($A25,000) a year would have been protected.

Conclusion

At this, probably still early, stage of the crisis (or disaster), any conclusions must be tentative. Future events may demonstrate that the response was the best possible. Equally, though, the 'state of play' appears strongly to indicate that the government, driven by MAFF and the NFU, in playing a weak hand has got it wrong. What should have been a short-lived crisis has been turned into an ongoing disaster. The author therefore offers some thoughts based on the current state of play.

- The main areas of infection were remote from the place of detection (the Essex slaughterhouse) and the reported original site (the piggery on Tyneside). One was on the opposite side of the country from Tyneside, in Northwest England/Southwest Scotland), the other some 400 miles away (by road) in the southwest.
- This apparent immediate cross-nation spread makes this occurrence significantly different from the 1967 event.
- New events need new thinking. If an emergency management lesson is to be learned, it is that response should not be based solely, or necessarily even mainly, on historical experience—on hindsight. In a rapidly-changing society, what was applicable and appropriate yesterday is not necessarily so today.
- In this crisis, the lobbying power of the NFU coupled with its closeness to MAFF has ensured a suboptimal response to a crisis. There needs to be a national disaster 'centre of excellence', independent of traditional and entrenched power structures, able to offer guidance and assistance in major untoward events.
- In crisis, it is necessary to consider only the realities of the situation. Particularly when starting from a weak position, successful management demands that the reality of the event, not the vested interests of the directors, pressure groups and those directly involved, is addressed.

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This article has been refereed

Book Review

Count Me In! 501 Ideas on Recruiting Volunteers

by Judy Esmond, Ph.D
Published by Newseason Publications, 2001
246 pages, ISBN 0 646 40894 1

A particularly useful book on recruiting volunteers, this is an excellent resource that brings together a number of key principals with realistic ideas associated with recruiting volunteers.

This resource introduces the concept that there is far more to recruiting volunteers than putting an ad in the local paper and suggests continuous improvement and a multi-level approach. Concepts and ideas included in this book are interlinked and presented in a snapshot format by chapter for ready reference, easy digestion and application.

Contents assist the reader to take into account the many strands of recruiting volunteers. From an internal audit considering what an organization is bringing new volunteers into, to great suggestions as to how an organization identifies ways to be their own best ambassadors, right through to the 'sharp end' of actually recruiting volunteers. Includes practical tips and ideas for both window of opportunity and ongoing recruitment strategies, Volunteer Managers and those involved in the recruiting process can pick and mix ideas that fit with their local communities needs and organizational resources.

This book also provides assistance for Volunteer Managers in identifying gaps in areas of the practice of volunteer management with further readings suggested as a handy reference.

Count Me In! 501 Ideas on Recruiting Volunteers provides the Volunteer Manager (paid or unpaid) with a broad spectrum of concepts relating to volunteer management and recruitment along with some very practical and useful ideas to back up those concepts. All in all, an easy to read, easy to use, valuable resource for those who are involved in both recruiting volunteers and volunteer management.

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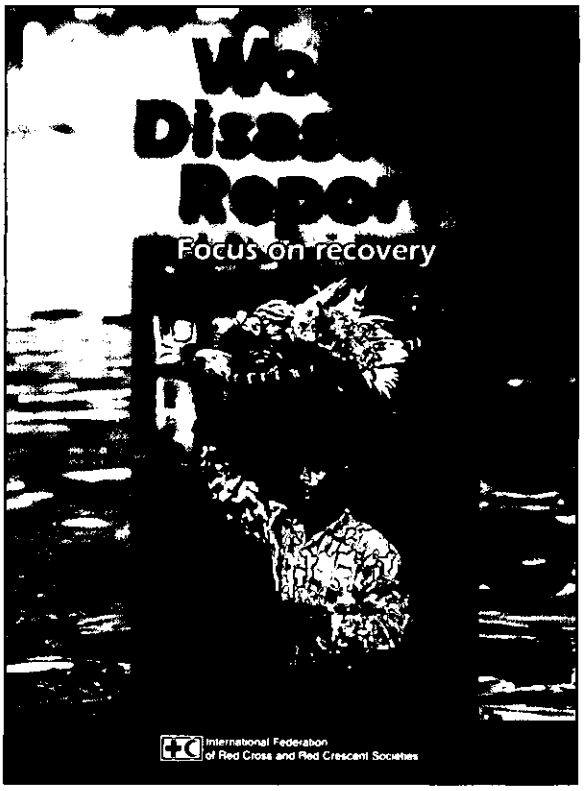
Book Review



World Disasters Report 2001

A failure to understand the economic and social realities facing disaster victims leads to poorly designed aid efforts which don't help protect people from the impact of future disasters, according to the latest *World Disasters Report* released by the International Federation of Red Cross and Red Crescent Societies (Federation).

'Too often, efforts at reconstruction after a major disaster don't lead to recovery. Instead they end up rebuilding the risk of danger in future disasters by ignoring economic realities,' says Mr Didier Cherpitel, Secretary General of the Federation.

Survivors of Venezuela's devastating mudslides in 1999 who'd been moved to safer, remote areas, were unable to earn a living there and have begun to return to the site of their former homes and are again at risk. Since Tajikistan gained independence, little investment has been made in developing its small scale rural economy. Despite extensive food aid for eight years, it is still unable to feed itself. Last year, its worst drought in 74 years left around two million people facing hunger and malnutrition while some of its available water was pumped into irrigating its cotton fields, Tajikistan's main cash crop.

Many donors and governments direct their aid efforts mainly towards rebuilding damaged infrastructure, not peoples' livelihoods. A survey cited in the *World Disasters Report* found 53 per cent of aid projects focussed on rebuilding infrastructure while only 10 per cent were on components of economic recovery. This then impacts on social recovery. In Somalia, ten years on from the 1991 conflict and more than US$ 4 billion of aid later, one child in three still dies before reaching the age of five.

The report also looks at the widespread leakage of aid dollars from disaster stricken countries which further weakens chances of recovery. In Bangladesh for example, 60 per cent of the funds spent on the Flood Action Plan between 1990-1995, did not stay in the country but were used to pay foreign consultants. Other common approaches to aid and assistance which undermine local economies including tied aid and the funding gap between emergency, rehabilitation and development programmes, are also criticised by the *World Disasters Report*.

'Aid needs to be used to rebuild local economies and communities. To do that, donors need to understand the links between relief, rehabilitation and development and to involve local people more in determining the kind of help they need. So the way aid programmes are funded has to change,' explains Ms Astrid Heiberg, President of the Federation.

'The Red Cross and Red Crescent is investing more in community-based programmes to empower people so as to better prepare them against future disasters.'

This approach to aid has shown concrete results particularly if recovery programmes are geared to disaster preparedness and risk reduction and so lessening their impact on people's lives and livelihoods.

- In the Indian state of Orissa, the construction of 23 Red Cross cyclone shelters, combined with community education and disaster mitigation, saved 40,000 lives in one disaster alone.
- In one region in Vietnam where homes are destroyed annually by flooding, a Red Cross programme replaced lost homes with stronger, disaster-resistant ones. Local communities helped with the design and building of these homes and the following flood season, only one home out of the 2,450 was destroyed.

This year's *World Disasters Report* also looks at the cost of natural disasters which have swept away any developmental gains made in recent decades. The report contains chapters on the role of livelihoods, Venezuela, Somalia, Vietnam, Tajikistan and new data on disaster trends.

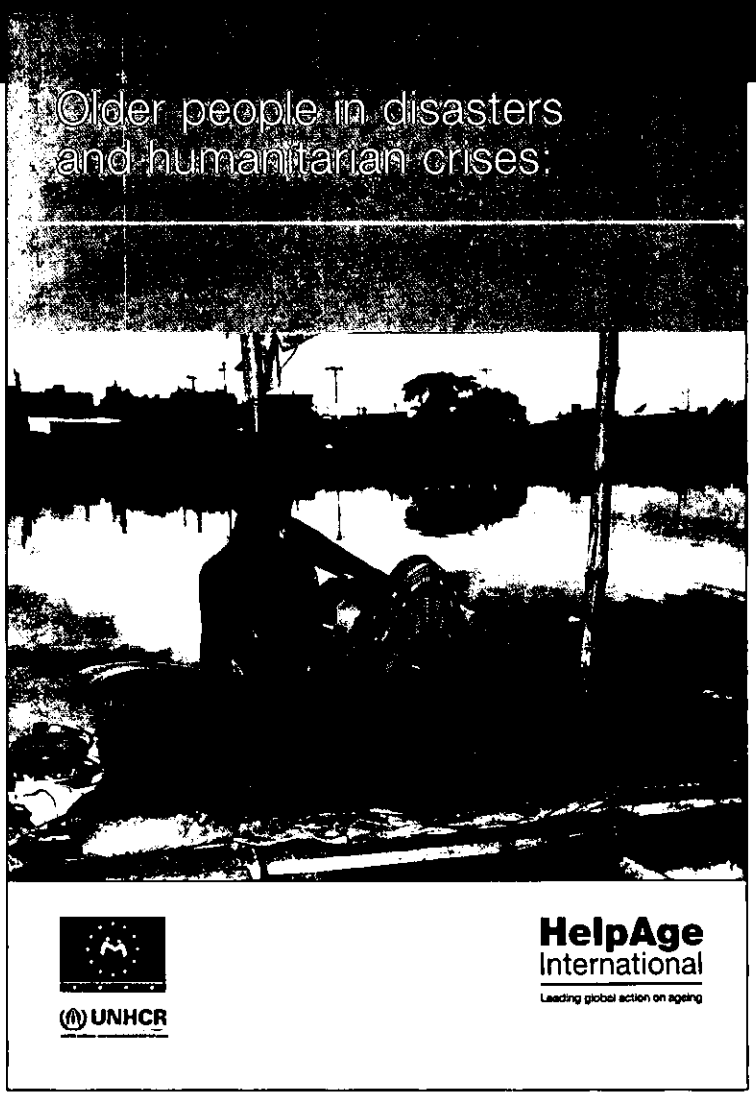
The 2001 World Disasters Report is available from the Australian Red Cross National Office for $65 (incl. postage and handling), PO Box 196, Carlton South, Victoria 3053.

Book Reviews

Older People in disasters and humanitarian crises: Guidelines for best practice

Published by HelpAge International
24 pages, ISBN 1 872590 02 0

Reviewed by Andrew Coghlan, National Training Consultant, Disaster Recovery.



Currently there is much interest and a number of publications being developed in the consideration of vulnerability to disaster. This booklet (25 pages) is a worthy addition to the literature, providing a practical approach to supporting a group often identified as vulnerable; older people in disaster.

Produced by HelpAge International, (an organisation with over 20 years of experience working with and for older people in development projects and emergencies) this booklet provides a succinct set of Guidelines for dealing with the vulnerabilities and needs of older people in crisis situations. Based on both practical experience and research in areas as diverse as Asia, Africa, Europe and the Americas the basic aim of the Guidelines is "to meet the special needs of older people in emergencies."

Not only is the vulnerability of older persons considered, but also their potential contributions, special needs and self-supporting capacity. Features of the publication include;

- Key approaches and actions to reduce vulnerability associated with ageing
- Suggested means of enhancing the capacity and contribution of older people in emergencies.

In so doing, the emphasis of the Guidelines is very positive, outlining measures which will enhance older peoples ability to deal with disasters and encourage their contribution.

The document is divided into 4 sections, under the following headings:

- Guidelines for best practice
- The issues
- The research
- Applying the guidelines

Guidelines for best practice

Acknowledging that older people are often identified as particularly vulnerable to disaster, this section identifies consultation, inclusion and empowerment as primary indicators of good practice. Best practice guidelines are then neatly described under the headings of:

- Addressing older people's needs
- Meeting basic needs
- Mobility
- Equal access to essential services
- Social, psychosocial and family needs
- Recognise and support the contributions of older people

The information provided throughout this section provides the core of the guidelines; a brief discussion of each of the topics, together with a range of practical ways in which to address them. In this manner the document is a potentially very powerful tool in guiding service delivery for older persons in disasters.

The issues

The second section provides an insight into the vulnerability of older persons to disaster. In addition to consideration of the capacities and contributions of older persons in disasters there is also a useful discussion of gender issues within this group.

The research

This section outlines the research program developed by HelpAge International which provided the basis for the development of the Guidelines. A significant finding identified is that, 'Many older people feel vulnerable and dependant on external support in the absence of resources to manage their changed circumstances' (brought about by the disaster). The Guidelines provide a useful tool to address this disempowerment.

Applying the guidelines

The final section of the Guidelines provides sample checklists for assessing older persons vulnerability to disaster. Themes include:

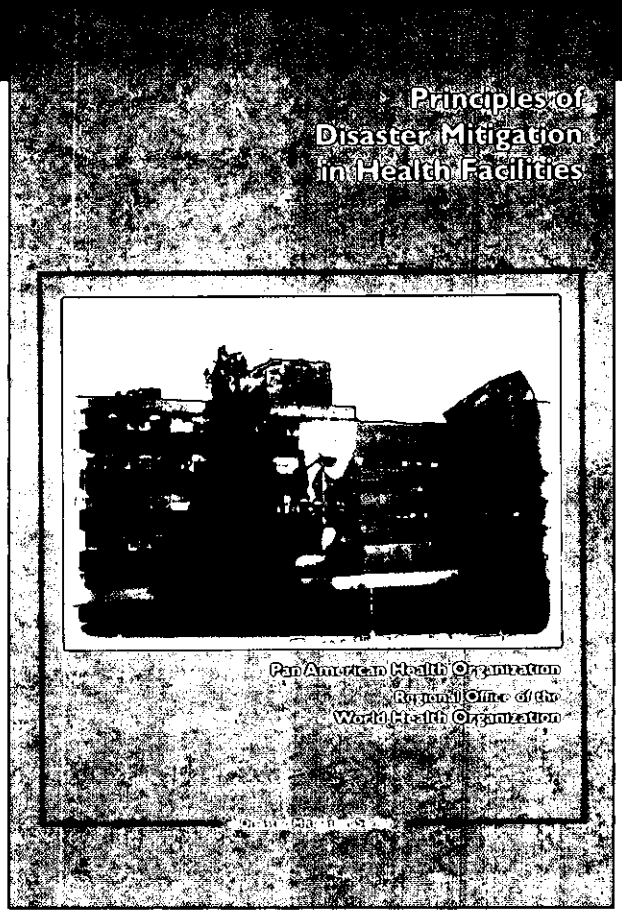
- Family circumstances
- Social support
- Health
- Mobility
- Basic needs

The checklists are a very practical support to the information discussed throughout this very informative publication.

Principles of Disaster Mitigation in Health Facilities

by Pan American Health Organisation and World Health Organisation, 2000, 132 pp., ISBN 92 75 12304 7

Reviewed by Assoc Prof Geoff Boughton, Curtin University.



This book is easy to read, and gives a very broad overview of keeping hospitals operational during and after emergencies. The book focuses specifically on earthquakes, and is of use to the following groups:

- Planners of new hospitals — will benefit from an understanding of the vulnerability of various aspects of hospital facilities and operations. The book will help to prepare specifications that will lead to resilience in the capacity of the hospital to deal with emergencies.
- Designers of new hospitals — structural, architectural and functional designers will benefit from the tips in this book. The contents will assist in specifying details for performance that can be incorporated in the construction — the time when it the work is most cost-effective.
- Hospital operators — will see the benefits of continuing studies of vulnerability of hospital functions. Regular maintenance and improvement is required to ensure that operation will not be compromised when it is most important — after an emergency.

The book has been condensed from separate volumes dealing with structural, non-structural and operational aspects of vulnerability. It gives the overview of processes needed to ensure continued function rather than the detailed information required to perform vulnerability analyses. Architects, engineers and hospital administrators will appreciate different aspects of the book, but will need to fall back on other references to apply the principles given.

The information is complemented with illustrations — pictures, and case studies drawn primarily from Central and South America. Because of Australia's limited experience with major earthquakes, we must learn from the experience of others. The Newcastle earthquake of 1989 caused operational problems in the Newcastle Hospital which were not dissimilar to the ones presented in this study.

Major hospitals generally contain large numbers of people many of whom have reduced mobility and cannot respond quickly to calls for evacuation. The level of life protection that they need to provide is high. They also have a vital role in normal response and recovery functions following an emergency, so it is important that not only do they survive the event, but they have a functionality afterwards. This has implication for:

- the structural response of the building - it needs to perform significantly better than normal structures;
- the behaviour of non-structural items such as services and equipment, finishes and cladding, which must enable the normal vital functions of the hospital to continue; and
- the organisational functions of the hospital. Staff, patients and supplies need to flow in an efficient manner in spite of the changed circumstances. This requires meticulous attention to detail in the planning for such events.

The book is divided into major sections that cover structural, non-structural and organisational aspects of hospitals. It is quite unique in the way it brings these seemingly very different areas together.

Available from:
PAHO Online Bookstore: http://publications.paho.org (a secure ordering site) or through the PAHO Distribution Center: paho@pmds.com; Fax: 301 206 9789; PO Box 27, Annapolis Junction, MD 20701-0027, USA
Cost and order code is: US $22.00.
Order code: OP 133
http://publications.paho.org/english/moreinfo.cfm?Product_ID=583

Geoff Boughton is an adjunct Associate Professor at Curtin University of Technology. He has a structural engineering background and has been involved with damage surveys following natural events for over twenty years. His work includes consultancies for the United Nations in Emergency Management and Disaster Mitigation. He actively participates in Recovery Management courses in association with the AEMI, and he runs a consultancy practice from Perth WA.

Contact details:
Director, A/Prof Geoff Boughton PO Box 30, Glengarry WA 6023, phone: 041 921 3603, fax 08 9246 3090, email:boughton@timber.org.au

Volunteers' national peak body mooted by Summit

Emergency management and services volunteers are planning to form a National Peak Body following a three-day Summit meeting in Canberra in mid-October.

The volunteers acknowledged their need for a National Peak Body, which can represent volunteer emergency related organisations and give effect to the major recommendations from the Summit.

More than 400 emergency management volunteers and representatives of volunteer organisations met in Canberra on October 10, 11 and 12, to tackle some of the issues facing emergency management volunteers in Australia.

The Summit was officially opened by the Governor-General, Dr Peter Hollingworth AC OBE.

In the emergency management sector, the volunteers are the people who rescue victims from car crashes and marine accidents, fight fires, protect property, evacuate people in floods and provide first aid and medical help at mass gathering such as sporting events, rallies and protests. They are the people who play a critical role in helping the community recover from disasters like floods and storms, building collapses and rail and bus accidents.

The 400 people in Canberra last week represented the half a million volunteers in the emergency management sector—from State Emergency Services, St John Ambulance Australia, church-based groups such as Anglicare and Adracare, Red Cross, Salvation Army and surf life saving, search and rescue dog associations, coastal patrols, marine rescue and fire authorities in every State and Territory.

The Summit was organised by Emergency Management Australia with the support of the Department of Family and Community Services as part of the International Year of Volunteers. With the theme: 'value your volunteers or lose them', it focussed on the ways to develop a stronger volunteer sector. Through workshops and plenary sessions, it tackled problems across a range of areas from training to funding and recognition to legal liability.

The Director General of Emergency Management Australia and Chair of the Summit Organising Committee, Mr David Templeman, said that the volunteers at the Summit had concluded that the sector is 'simply not well enough recognised' by all levels of government, the community, media and industry, particularly the insurance industry.

Recognition

Examining the evidence on the expression of national recognition, the volunteers concluded that legal protection was not comprehensive, funding was deficient and training was not consistently applied across Australia.

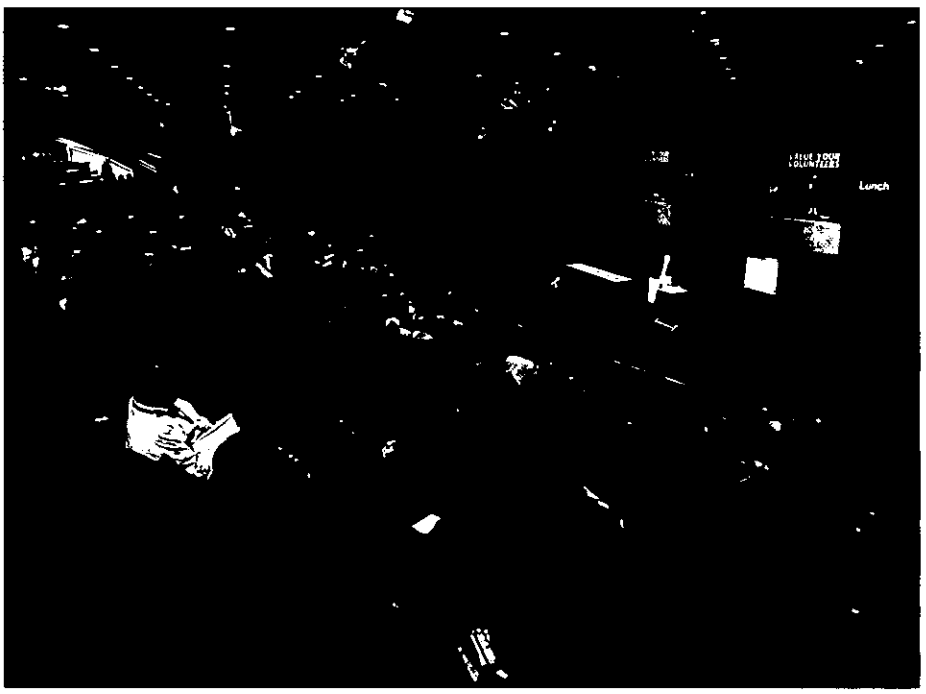
They recognised that while support was available from the Commonwealth through EMA to tackle these problems, essentially the action lies with the volunteer organisations themselves and with the proposed National Peak Body.

The volunteers agreed that the solution to this lack of recognition lies not only with all levels of government and the media, but also with the volunteer organisations themselves.

Volunteer organisations needed to develop partnerships with each other, with the media and particularly with local government, so they can take their messages to the community in a more consistent, frequent and informative manner.

Legal/Protection

The Summit recognised that the level



Director General of EMA, David Templeman, chairs the final session of the Summit at the National Convention Centre in Canberra.

of protection for volunteers is uneven, and in some cases, deficient.

In addition, existing arrangements are not well understood by the volunteers themselves. The problems faced by the volunteers are not well understood by local government or by State and Territory Governments.

The Summit urged all organisations to review the legal risks that their volunteers face and identify deficiencies - both legal and financial. This information should be shared both within and between States and Territories, and legislative amendments and policy developed collectively should be put forward to better support volunteers.

'We need to educate volunteers about their responsibilities and the protection to which they are entitled,' the Summit concluded.

Some of the hard work at the Summit was in combining the discussions in each breakout group into a consolidated set of recommendation presented at the plenary session. The eight facilitators and the four topic presenters (Michael Stringer, Peter Smith, Rick Stone and John Gledhill) formulated the final outcomes in terms of the problems identified and the action required. The Funding facilitators are pictured here with Hori Howard (standing left) coming to grips with the issues.

Training

The volunteers agreed that to comply with Commonwealth and State and Territory policy, all organisations must accept the National Training Framework.

All organisations must educate their staff and volunteers to reinforce the need to implement the National Training Framework.

Volunteers concluded:

- that the Australian National Training Authority (ANTA) through the Public Safety Industry Training Advisory Board (PSITAB) should consider the provision of marketing and communication strategies
- The Department of Education, Training and Youth Affairs and State Departments of Education could broaden the definition of 'trainee'
- volunteer organisations should work with the PSITAB to develop partnerships that support non-registered training organisations
- agencies should be encouraged to build 'bureaucratic shields' that minimise administrative overload.

The Governor-General, Dr Peter Hollingworth meets Ms Rocky O'Brien, Territory Officer with St. John Ambulance Australia, ACT

Funding

A proposal to form a National Peak Body that would develop strategies for better funding was strongly supported by the Summit.

The volunteers agreed there was a need to develop a methodology to determine the funding requirements of the organisations and their value to the community.

The Summit also agreed that:

- adequate funding for protective clothing and safety equipment was fundamental to the safety and well being of the volunteers and sufficient funding must be found
- volunteers should not be financially disadvantaged for volunteering but the volunteers opposed direct payment
- the National Peak Body should examine volunteer employer support programs.

Volunteers praised by Parliamentary Secretary

The National Summit for volunteer leaders and managers from Australia's emergency management and emergency service organisations began with an enthusiastic opening address from Dr Brendan Nelson MP, Parliamentary Secretary to the Minister for Defence.

Speaking to more than 450 volunteers and official guests from across Australia, he officially welcomed the volunteers and formally recognised their commitment and work to various emergency service organisations.

Dr Nelson said 'without Australia's dedicated emergency management volunteers who number more than half a million, communities would be unable to deal with disasters like fires, storms, floods and cyclones'.

'It is both appropriate and timely this year, in the International Year of Volunteers, that we should define the way ahead for volunteers so they will continue to be committed, enthusiastic and available', Dr Nelson said.

Dr Nelson's speech emphasised this year's Summit theme of 'Value Your Volunteers – Or Lose Them'.

'Would we in any sense be a community without those who give up their time and resources in the service of others? Imagine Australia without men and women who selflessly serve us in not only times of natural and technological disasters but in preventing them and cleaning up afterwards', Dr Nelson said.

'I think you have recognised that in a management sense, good intentions and volunteer labour is not enough. I am sure that while most Australians look at emergency services volunteers and breathe a great sigh of relief that you are there... they are probably quite oblivious to many of the issues that you are raising at this summit. Many Australians probably don't realise that you are volunteers.'

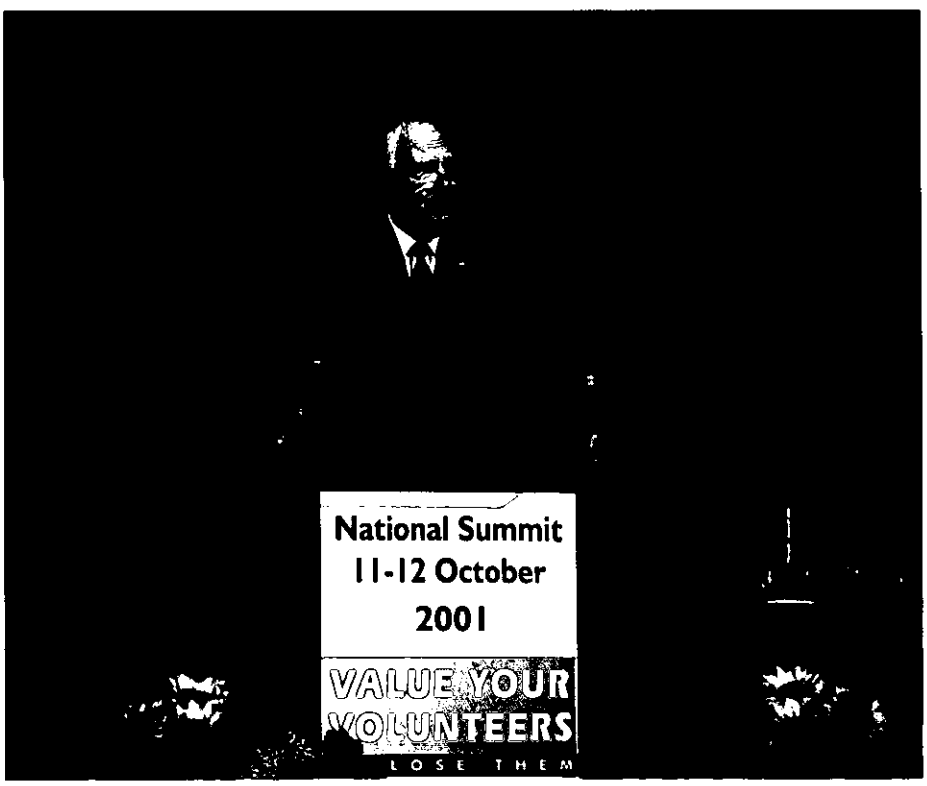
'I am thinking here of issues about funding, about legal liability, training and about recognition and rewards. All those have been raised in some detail in the discussion papers issued in advance of this Summit.'

'There are some very good ideas and solutions which you will, no doubt, debate at the Summit. There are ideas about Government tax regimes; about nationally accredited training schemes; about funding; and about audits of legal risk.'

'I recognise that the resolution of these critical management issues will mean the continued development of volunteering in the emergency management sector.'

'Failure to resolve them could well mean a severe dint in volunteer framework that supports emergency services across Australia. As you've said, probably better than I could, in the slogan title for this summit; Value your volunteers or lose them,' Dr Nelson said.

Parliamentary Secretary to the Minister for Defence, Dr Brendan Nelson MP, meets Joe Taylor from Gosnells SES in Western Australia.



The Governor-General, Dr Peter Hollingworth, officially opened the Summit in Canberra on Thursday 11 October.

At the Summit, David Templeman, Director General of EMA; Sue Adams, Captain of the Humpty Doo Volunteer Fire and Rescue Brigade in the Northern Territory and Chris Beer from the NT Fire and Rescue Brigade.

Glen Hall, WA SES; Jon Belmonte, Salvation Army Emergency Service and John Kelly from St Vincent de Paul Society.

From Anglicare NSW, Kay Graves, John Johnstone and Dawn Ferguson.

DG looks ahead to results

In presenting the Summit outcomes, the Director General of Emergency Management Australia (EMA), David Templeman, posed the question: 'So where to from here?'

He continued: 'My intention would be to have a further Summit of this type in about two years, and to put some rigour in the process so that you can come back here and say, "Well what did you actually achieve; what was done; what did we achieve?"'

'I intend to keep the Summit Steering Committee going, but we may have to look at the composition to see if it needs to be broadened. I don't necessarily want to have a cast of thousands on the committee, but if we need to tweak it to ensure that we get all sectors covered, then we'll do that.'

'EMA is prepared to take strategic leadership. This will ensure that we share the outcomes of this Summit with the Australian Emergency Management Committee at State and Territory levels and so empower them to pass that information down to the community and the local government level.'

'I will be writing to inform Dr Brendan Nelson of the outcomes of the Summit and my suggestion to him will be that he writes to all his Parliamentary colleagues as he did to inform them about this Summit. In a caretaker situation like we're in at the moment, it will also be courtesy that he write to the Leader of the Opposition informing him of the outcomes of the Summit. I have since spoken with Dr Nelson and he is supportive of this approach.'

'So in some respects we have an opportunity to ensure in a truly bipartisan way that all Parliamentarians can actually be informed of the outcomes.' 'We have asked Hori Howard to pull together a major report with the draft expected in mid-November. That report will be then shared with all organisations that have had involvement in this Summit and others. So in a truly consultative, participative way, a final report should be ready in January in 2002.'

'Following the election on 10 November we would expect that the report will be put to Government for consideration.'

'I need your assistance in that process too. Once we have the report that we all jointly own, it needs to actually have your total buy-in and involvement and commitment to the process and the priorities that have been addressed. That will be fundamental to actual achieving the outcomes. In two years time we hope to see things have been done as a result of the recommendations.'

Mapping for emergency situations: the Canadian experience

by Dr. Kian Fadaie, Technology Advisor
Technology Assessment,
Canada Centre for Remote
Sensing Geomatics Canada,
Natural Resources Canada,
Ottawa, Ontario

An overview of Canadian disasters

Canada experiences the same natural and human-caused emergencies as other countries. However, to date, Canada has not had to deal with hurricanes, severe earthquakes or active volcanoes in populated areas. Emergency Preparedness Canada (EPC), the federal agency responsible for coordinating the national response to emergencies, has a record of 145 floods, 98 storms, 69 transportation, 60 hazardous chemical and 55 drought related emergencies that have occurred since 1900. Of the 662 emergencies in the EPC database 68% have been attributed to natural causes and 32% to human activities. *Table 1* indicates the types of disasters. Disaster types with an asterix are not common in Canada.

Over the past 25 years, disasters in Canada have caused more than $1 billion damage per year. In addition, forest fires cause about $0.5 billion damage per year. However, these are not counted as disasters unless they affect communities or cause loss of life. In recent years, Canada has suffered its three most expensive natural disasters. The tragic loss of life and extensive damage to property that resulted from the 1996 Saguenay flood, the 1997 Red River Basin flood and the 1998 ice storm, all reflect Canada's growing vulnerability to disasters.

The freezing rain that fell over a six day period in January, 1998, produced ice build ups of over 8 cm on trees, power lines and other structures causing wide spread damage. 1,300 hydro towers and 35,000 hydro poles were destroyed and 1.6 million customers in Canada and a further 0.5 million in the United States were without electricity for up to two weeks. 30 deaths were attributed to storm and the estimated damage exceeded $4 billion.

Figure 1 shows the increasing costs of natural disasters in Canada from 1970 onward.

Factors contributing to the increased vulnerability of Canadian society to disasters include:

- *More people with more personal belongings live in Canada.* In the past, many storms occurred in open spaces. Today, continuing population and economic growth are reflected in a greater accumulation of property and public infrastructure.
- *We live closer together in urban centres.* More than half of all Canadians live in large urban centres where they are more vulnerable to technological accidents and failures. Also, some communities continue to build in areas susceptible to floods.
- *Our infrastructure is ageing.* Much of our infrastructure was designed years ago when building codes were less strict: for example, public and private buildings in the earthquake prone Vancouver area on the West Coast.
- *The climate is changing.* In recent years, Canada has experienced a warming trend and severe weather events have increased in frequency.

Types of disasters	
Natural disasters	
Drought/Famine	
Earthquakes	shock wave, tsunami
Floods/fire	forest and bush
High wind	cyclone, tornado, storm, hurricane, *typhoon
Mass movements	landslides and avalanches
*Volcano	
Other	heat and cold waves, epidemics, infestation, food and water shortages
Man-made disasters	
Accidents	transportation, structural collapse
Technological accidents	chemical, nuclear, explosions, atmospheric, oil pollution
Agricultural/ environmental fires	

Table 1: disaster types

Disaster response

Canadian Centre for Emergency Preparedness was incorporated in 1993 with a mandate to assist communities, governments and private businesses to prepare for, prevent, respond to, and recover from man-made or natural disasters. This Centre is the most recognised emergency response educational organisation in Canada. It also performs research and analysis to safeguard lives and reduce damage o property by fostering better preparedness for emergencies in Canada. The centre organises the World Conference on Disaster Management in June of every year in Hamilton, Ontario Canada.

More than 600 delegates from the five continents attend over 50 educational sessions ranging from mass evacuations due to flooding to civic trauma arising from aeroplane crashes. This conference provides a forum for partnership among regional, national & international organisations, including the federal Government of Canada, the Canadian Association of Chiefs of Police, the Canadian Red Cross, the Association of Public Safety Communications Officials, the National Coordinating Council on Emergency Management, the Disaster Recovery Institute International, and many others.

Responsibility for dealing with emergency situations rests first with the

EMA UPDATE

Spring 2001

Produced by
Emergency Management Australia through the
Australian Emergency Management Institute
Main Road, Mount Macedon, Victoria 3441

Commonwealth Aviation Disaster planning

Recent meetings between EMA, the Commonwealth Department of Transport and Regional Services (DoTRS), the Australian Transport Safety Bureau (ATSB), the Australian Maritime Safety Authority (AMSA), and the Civil Aviation Safety Authority (CASA) have identified a number of gaps in planning for aviation accidents and the need to develop a Commonwealth Aviation Disaster Plan. The purpose of the plan would be to prescribe (a) how the Commonwealth would assist States in the event of a major air accident in a State jurisdiction and, (b) how the Commonwealth would manage a major air accident in a Commonwealth jurisdiction.

EMA has agreed to conduct a workshop in November to inform the development of the plan. The workshop will be attended by representatives from the Commonwealth, States and Territories and the aviation industry. It is anticipated that the plan will be ready for publication in mid-2002.

For further information contact: Mark Sullivan
phone: 02 6266 5050; email: msullivan@ema.gov.au

Telecommunications Disaster planning

Deregulation of the Australian Telecommunications Industry has led to a number of challenges in the provision of telecommunications in times of disaster particularly those that might be required at short notice. Emergency Service Organisations have become used to only having to deal with Telstra over many years and there are now a number of new players operating in a competitive market.

To review how the coordination of emergency telecommunications could be better effected, the Australian Communications Authority (ACA) has formed a Displan Taskforce. The Taskforce includes representatives from the ACA, Telecommunications Industry and the Emergency Management Sector. A set of draft guidelines entitled, 'Communications Support for Emergency Management' have been developed and are soon to be released comment. The Guidelines will outline how the Telecommunications Industry can best coordinate response to requests from Emergency Service Organisations for the provision of short notice telecommunications requirements during emergencies.

For further information contact: Mark Sullivan
phone: 02 6266 5050; email: msullivan@ema.gov.au

National Chemical Biological and Radiological Working Group

To continue the work undertaken for Sydney 2000, EMA has recently formed a National Chemical Biological and Radiological (CBR) Working Group. The Working Group comprises representatives from each State and Territory and a number of Commonwealth agencies.

The role of the Working Group is to develop procedures and arrangements for dealing with a CBR incident, provide guidance on the acquisition of CBR related equipment, provide guidance on the development of CBR training and exercises, and to coordinate Commonwealth/State initiatives relating to CBR.

The Group met for the first time in August. Issues discussed included response measures for suspicious biological materials and packages and confirmation of CBR Threat Management Procedures. A clear priority identified was the need for a National CBR Strategy. A small working party has been established to further develop the strategy paper.

For further information contact: Don Patterson
phone: 02 6266 5165; email: dpatterson@ema.gov.au

Maritime Radiological Response planning

Shipments of Irradiated Nuclear Fuels (INF) periodically transit off the coast of Australia between France and Japan. While the likelihood of an incident occurring involving radioactive materials is considered to be negligible due to the strict packaging of the material and the use of purpose designed ships, it is prudent for response arrangements to be put in place.

Following a meeting of key Commonwealth agencies, EMA has undertaken to develop a Commonwealth Government Maritime Radiological Response Plan (COMARRPLAN). COMARRPLAN will outline the roles and responsibilities of Commonwealth agencies and the arrangements for responding to maritime radiological incidents which could threaten Australia or its marine environment.

For further information contact: Don Patterson
phone: 02 6266 5165; email: dpatterson@ema.gov.au

Contingency plans

EMA has recently completed a comprehensive review of the Commonwealth Government Disaster Response Plan (COMDISPLAN). The revised plan was released in September. The Provisional Commonwealth Government Reception Plan (COMRECEPLAN) has also been finalised and was released in July. Copies of the plan are available from EMA.

For further information contact: Kevin Napthali
Phone: 02 6266 5442; email: knapthali@ema.gov.au

EMA Projects program

The EMA Projects Program is aimed at fostering projects that help improve Australia's capabilities for preventing or dealing with natural or technological hazards and disasters. From the 80 applications received, the Program will provide funding for 20 projects which are listed below. The projects encompass a wide range of topics including school education packages, research projects, and community awareness initiatives. A feature of this year is the funding of five projects focussing on emergency management volunteer organisations and their responsibilities.

Products of the 2000-2001 EMA Projects Program have been distributed to the executive officers of state emergency management committees (or their equivalents) in each State and Territory, as well as the EMA Library at Mt Macedon.

Projects approved under the EMA Projects Program in Financial Year 2001/02

01/01: Dissemination of Landslide Risk Management Concepts and Guidelines - Mr Andrew Leventhal, Deputy Chairman, Australian Geomechanics Society (AGS) c/- Institution of Engineers Australia, Canberra ACT.

02/01: Economic Benefits of Land Use Planning in Flood Management – Mr Ian Gauntlett, Manager Floodplain Management, Department of Natural Resources and Environment, East Melbourne VIC.

03/01: National Storm Tide Mapping Model – Ms Lesley Galloway, Director, Disaster Policy and Research Unit, Counter Disaster & Rescue Services, Department of Emergency Services, Brisbane QLD.

04/01: Development of an Implementation and Audit Strategy Assessing Community Resilience and Vulnerability – Dr Graham Marsh, School of Management, RMIT University, Melbourne VIC; Mr Philip Buckle, State Emergency Recovery Unit, Department of Human Services; and Rev Sydney Smale, Statewide Recovery Coordinator, Victorian Council of Churches, VIC.

05/01: Assessment of the Effectiveness of Several Methods of Delivery of Public Awareness Information on Tropical Cyclones to the Queensland Coastal Communities – Mr Geoff Crane, Deputy Regional Director, Bureau of Meteorology, Brisbane QLD.

06/01: Assessment of Capability of Local Government for Visualisation of Community Vulnerability - Mr Norm Free, Team Leader – Emergency Management Shire of Yarra Ranges, Lilydale VIC.

07/01: Developing and Trialling Procedures for Valuing the S/TES – Mr Chas Keys, Deputy Director General, NSW State Emergency Service, Wollongong NSW.

08/01: Public Cyclone Shelters–Documentation of Performance Criteria for Public Cyclone Shelters – Mr Keith Farr, Executive Director, Building Division, Qld Government, Department of Public Works, Brisbane QLD.

09/01: Bushfires–A Threat to People and Places – Ms Denise Miles, Project Officer, Geography Teachers' Association of Victoria Inc (GTAV), Camberwell West VIC.

10/01: Radio Wave Attenuation in Bushfires, Tropical Cyclones and Other Severe Atmospheric Conditions – Professor Mal Herron, Head of School of Mathematical and Physical Sciences, James Cook University, Townsville QLD.

11/01: First Steps to Recovery–Resource Kit – Mr Bob Stevenson, Disaster Services Officer, Australian Red Cross, North Adelaide SA.

12/01: HAZMAT Awareness: A 'First Responders' Responsibility in Identifying the Possible Presence of Hazardous Materials of Emergency Situations – Mr Ken O'Brien, Specialist Response Officer, Country Fire Authority, Burwood VIC.

13/01: Enhancing Residents' Hazard Awareness, Disaster Preparedness and Coping with Emergencies through WWW/Internet-based Information Sources – Associate Professor Bernd Rohrmann, Dept of Psychology, University of Melbourne VIC.

14/01: Assessment of Vegetation–related Hazard Conditions and Amelioration Potential in the Darwin (NT) Urban Landscape – Mr Frank van der Sommen, Principal Consultant, Vegetation and Land Management Services, Tiwi NT.

15/01: Emergency Management on Off-shore Tourist Resorts – Mr Warren Bridson, District Manager, Disaster Operations, Counter Disaster and Rescue Services, Mackay QLD.

16/01: The Development of International Best Practice Standards for the Provision of First Aid Services at Mass Gatherings – Mr Paul Arbon, Chief Superintendent, St John Ambulance Australia, Canberra ACT.

17/01: Training of Part-time and Volunteer Workforces. A Look at Training Loads from the Perspective of Emergency Service Organisations – Mr David Vern Chamings, HazMat Liaison Officer, NSW Fire Brigades, San Remo NSW.

18/10: Assessment of the Existing Skills and Knowledge Base of Emergency Management among Volunteers and their Capacity to Respond to an Emergency Situation at a Mass Gathering – Mr Cameron Earl, Associate Lecturer, School of Public Health, Qld University of Technology, Kelvin Grove QLD.

19/01: Stand-up and Be Counted: A National Strategic Planning Framework for Recruitment, Retention and Training of Volunteer Ambulance Officers – Assoc Professor Judi Walker, Director, Dept of Rural Health, Uni of Tas, Laun. TAS.

20/01: An Evaluation of the Risks Faced by Organisations which Rely on Volunteers when Dealing with Emergency Situations – Mr David Widdowson, Managing Director, Surgam Management Group, Canberra ACT.

Projects approved under the EMA Projects Program in Financial Year 2000-2001

01/2000: Emergency Risk Management for Remote Communities Focusing on Aboriginal Communities in the Pilbara Kimberley – Ms Moya Newman, Senior Community Liaison Officer - Kimberley/Pilbara, WASES, Fire and Emergency Services Authority (FESA).

02/2000: Exploring the Wellbeing of Both Volunteer and Career-based Emergency Service Workers from Two Fire Service Organisations – Ms Robyn Betts, Clinical Program Director, VICSES, Hampton VIC.

03/2000: Recovery Awareness and Education in South Australia – South Australian State Disaster Recovery Committee, C/- Mr John Easton, Department of Human Services (Family and Youth Services), Adelaide SA.

04/2000: Design and Distribution of 'Building for Nature' – Mr Alan Grinsell-Jones, Master Builders Australia, ACT.

05/2000: Production and Distribution of a Handbook 'Rotary and Disaster Support Guidelines – Mr Jack Rynn, Rotary District 9600 DAAT Committee, QLD.

06/2000: Development of a Community Education Program on Cyclone-Resistant Buildings – Dr Mahen Mahendran, Associate Professor of Civil Engineering, & Director of Physical Infrastructure Centre, School of Civil Engineering, Queensland University of Technology, Brisbane QLD.

07/2000: Community Participation Model for Flood Monitoring, Awareness and Response in Rural Areas –Mr Wayne Gilmour, Floodplain Manager, West Gippsland Catchment Management Authority, Traralgon VIC.

08/2000: 'Nature Acts: Severe Storms and Earthquakes' – Ms Denise Miles, Project Officer, Geography Teachers' Association of Victoria Inc (GTAV), Camberwell West VIC.

09/2000: Australian Red Cross Emergency and Disaster Services Handbook 2000 – Ms Margaret Golack, Executive Officer, Disaster Services, Australian Red Cross, ACT.

10/2000: Fire Safety Education for Ethnic Communities Using the Iraqi Community of the Goulburn Valley as a Model – Mr Alex Caughey, Community Education Coordinator, Country Fire Authority, Goulburn Murray Area, VIC.

11/2000: Role of Local Government in Emergency Management–Mr Brian Clancey, Director, Legislation and Environment, Local Government Association of SA, Adelaide SA.

12/2000: 'More than a Band-Aid' the Development of Strategies to Improve Recruitment, Retention, Training and Support to Volunteer Ambulance Officers (VAO) – Associate Professor Judi Walker, Department of Rural Health, University of Tasmania, Hobart TAS.

13/2000: Flood Risk Assessment for Caravan Parks in NSW – Dr Stephen Yeo, Department of Physical Geography, Division of Environmental and Life Sciences, Macquarie University, Sydney NSW.

14/2000: Risk Preparedness Strategy for Australia's Cultural Heritage – Ms Robyn Riddett, Conservation Architect, Melbourne VIC.

15/2000: Development of Guidelines for Assessment of Personal and Community Resilience and Vulnerability by Local Government, Agencies and Communities – Dr Graham Marsh, School of Social Science and Planning, RMIT University; Mr Philip Buckle, State Emergency Recovery Unit, Department of Human Services; and Rev Sydney Smale, Statewide Recovery Coordinator, Victorian Council of Churches, VIC.

16/2000: Development of a Framework for Supporting the Local Agricultural Community in Times of Significant Disease Outbreak – Ms Sandice McAuley and Ms Jenny Branton, Safer Murrindindi Steering Group, Murrindindi Shire Council, VIC.

17/2000: Documentation of the East Timorese Refugee Operation – Mr Iain Rae, Director, NT Fire and Emergency Services, Darwin NT.

Recently completed projects for last financial year include:

Building for Nature, a guide to designing and constructing to mitigate against the impact of natural disasters. The booklet has been produced in conjunction with the Master Builders Australia and will be launched at their national dinner and award evening later this month. Copies can be obtained from the Canberra office on 02 62491433.

Nature Acts, Severe Storms And Earthquakes is a school education resource to develop creative activities and simulations, targeted at lower/middle secondary students on severe storms and earthquakes. This workbook was developed in conjunction with the Geography Teachers Association of Victoria. For copies phone: 03 98248355.

Australian Disaster Research Grants

Australian Disaster Research Grants program provides financial support for researchers to visit a disaster site in Australia to gather valuable data which might otherwise be lost. This financial year nine grants have been approved with topics ranging from cyclone and environmental research to post disaster health issues.

Australian Disaster Research Grants approved in financial year 2001-2002

01/2001: Policy Response to Economic Losses from a Disaster in a Maritime Environment – Dr Robert Gale, Senior Lecturer, Faculty of Fisheries and Maritime Environment, Australian Maritime College, Launceston TAS.

02/2001: Towards Understanding of Motivational Factors Influencing Volunteer Emergency Workers – Mr Chris Kearton, Noosaville QLD.

03/2001: Wind Effects On Buildings, Structures and the Environment due to Distortion of Independent Variables – Mr Rob Roy, Consulting Engineer, Hyde Park QLD.

04/2001: Control, Command and Coordination of Multi-casualty Incidents: A Case Study in Inter-agency Relations – Dr Michele Clark, Senior Research Fellow, School of Population Health, University of Queensland, Herston QLD.

05/2001: Damage Investigations after Tropical Cyclones and Severe Wind Storms – Dr David Henderson, Cyclone Structural Testing Station, School of Engineering, James Cook University, Townsville QLD.

06/2001: Proposal to Conduct Immediate Post Disaster Research in Tropical Northern Queensland and Northern Australia – Dr David King, Director of Centre for Disaster Studies, School of Tropical Environment Studies and Geography, James Cook University, Townsville QLD.

07/2001: Accurately Measuring the Magnitude of Tropical Cyclone Storm Surges – Dr Jonathan Nott, Senior Lecturer and Deputy Head of School, School of Tropical Environment Studies and Geography, James Cook Uni., Townsville QLD.

08/2001: Peritraumatic Dissociation in Australian Emergency Service Personnel – Ms Francesca Collins, Department of Psychological Medicine, Monash University, VIC.

09/2001: Rapid Epidemiological Assessment of Post-Disaster Health Impacts – Dr David Bradt, Royal Melbourne Hospital, Parkville VIC.

Australian Safer Communities Awards winners decided

Smoke alarms, satellites and snow rescues all figured in the 13 award winners in the 2001 Safer Communities Awards announced in Canberra in September. The winners were announced by the Parliamentary Secretary to the Minister for Defence, the Hon Dr Brendan Nelson MP.

At the ceremony—attended by the winners and representatives of government, industry and emergency management organisations—Dr Nelson praised the 'behind the scenes' work on prevention and preparedness for disasters.

'When many people think about disasters they think of the disaster response teams—the firefighters and the State Emergency Service volunteers battling fires and floods. The reality is that much of the work that makes our communities safer goes on behind the scenes,' he said.

'The well-structured education campaigns, the collection of data on hazards and communities, training, production of manuals; and the collaboration and development of response plans—all this has a real effect.'

Dr Nelson said that 'the outstanding characteristic' of all entries this year was the way that many diverse organisations collaborated to develop ways to make the community safer. 'The 13 national winners actually represented more than 20 organisations. They show local councils combining with local fire brigades, universities combining with St John Ambulance, agriculturalists combining with emergency managers and engineers, and ski resort managers teaming with State Governments. Most importantly, all this shows not just a growing concern in the community about disasters and their impact, but a real willingness to collaborate to make the community safer,' he said. The winners announced by Dr Nelson were:

Pre-disaster category:

Federal/State Government stream:

- Winner: New South Wales Agriculture for *Satellite Imagery.*
- Highly Commended: Queensland Fire and Rescue Authority for *Smoke Alarms Save Lives.*
- Highly Commended: Fire and Emergency Services Authority WA (FESA) for *Safe Country.*

Private stream:

- Winner: Snow Safety Inc for *Snow Safe.*
- Highly Commended: Adelaide University for *Emergency Management Plan.*

Combined stream:

- Joint Winner: Victorian Department of Natural Resources and Environment with supporting consultants for *Victorian Flood Data Transfer Project.*
- Joint Winner: Fire and Emergency Services Authority WA (FESA), Mission Australia and Department of Employment, Workplace Relations and Small Business for *Storm Safe Teams.*

Local Government stream:

- Winner: Coolamon/Junee Rural Fire District (New South Wales Rural Fire Service), Coolamon Shire Council, Junee Shire Council for *Fire Safe Towns.*

Voluntary stream:

- Winner: Anglicare for *Training and Resource Manual.*

Post-disaster category:

Federal/State Government stream:

- Winner Territory Health Services – Royal Darwin Hospital for *Royal Darwin Hospital Emergency Procedures Manual.*

Combined stream:

- Winner: Town of Kwinana Rangers, Kwinana South Bush Fire Brigade, Mandogalup Bush Fire Brigade, Kwinana Fire and Rescue for *Kwinana Post-Disaster Plan*
- Highly Commended: Tasmanian Department of Infrastructure, Energy and Resources and Partners for *Tasman Bridge Disaster 25th Anniversary Memorial Service.*

Voluntary stream:

- Winner: St John Ambulance Australia and the University of South Australia for *Mass Gathering First Aid.*

Speaking at the presentation, the Director General of EMA, Mr David Templeman, said that the range of areas from which the entries had come indicated that the Safer Communities Awards have truly spread across Australia.

He said the Awards were important to EMA as they fitted with EMA's responsibility to improve the Australian community's capacity to manage the risk of disasters.

The Awards also fulfil another important function and that is to encourage organisations to adopt best practice approaches to emergency management. The award winners are in fact role models for others – and in this way the good practice spreads from organisation to organisation and from community to community, 'he said.

Detailed profiles of the winning entries are at www.ema.gov.au.

What's on at AEMI

Emergency Management for Australia's Non-English Speaking Background

Communities: Residents and Visitors

EMA conducted a 3 day workshop as part of its National Studies Program, in partnership with the National Police Ethnic Advisory Bureau and Kangan Batman TAFE. The aim of the workshop was to develop a draft of national guidelines for working and communicating effective emergency management arrangements with people from non-English speaking backgrounds, including overseas visitors.

Participants in the workshop were invited from across Australia. They included representatives from local councils, the Red Cross, the Police, Emergency Services, Department of Immigration and Multicultural Affairs, Migrant Resource Centres, Ethnic Communities, and Tourism Authorities.

The workshop was structured around speakers with relevant emergency management experience who could present real experiences of working with multicultural communities in an emergency situation. Syndicate activities were then used in the intitial stages of the development of best practice guidelines for emergency managers working with culturally and linguistically diverse communities. The workshop report can be found on the EMA website at *www.ema.gov.au/5virtuallibrary/workshop_reports.html*

At the conclusion of the workshop a writing team was appointed to further develop and complete a manual entitled National Guidelines for Emergency Managers working with Culturally and Linguistically Diverse communities: residents and visitors. A draft of these guidelines can be found on the EMA website at *www.ema.gov.au/4edutrainresearch/natstudiesprogram2.html*

Decision-Making under Uncertainty in the Emergency Management Context

In August 2001, the Institute took advantage of a visit to Australia by distinguished international visitors, Silvio Funtowicz, Head of the Knowledge Assessment Methodologies Sector, Joint Research Center, European Commission, Institute for Systems, Informatics and Safety, Ispra (Italy) and Bruna De Marchi, Head, Mass Emergencies Programme, I.S.I.G. – Institute of International Sociology, Gorizia (Italy). These visitors and audiences of researchers and senior emergency managers discussed uncertainty and how it can affect decision making and policy development.

The workshop report can be found on the EMA website at *www.ema.gov.au/5virtuallibrary/workshop_reports.html*

In search of emergency management artefacts

A terracotta roofing tile with a 3 cm hole punched neatly through its centre; pieces of barbed wire fused by some kind of electric force; a quarter window from an EJ Holden sandblasted into opacity: what do they all have in common? They are all emergency management artefacts and we are in search of more. Can you help us? We are hoping to use such objects to enhance the display at the National Science Festival, held annually in Canberra. If you know of any curios like these, and how to access them, we would appreciate your help. Could you contact Russell Forster, School Education Officer, EMA, Mt. Macedon on: 03 5421 5242, or email russell.forster@defence.gov.au. Artefacts provided could be on a loan basis, if required. Full credit and acknowledgment guaranteed. By the way, the tile was holed in the Sydney hailstorm; the barbed wire was part of a fence struck by a thunder bolt and the quarter window was sandblasted during a severe wind storm at Port Hedland in 1975.

EMA publication news

Australian Emergency Manuals Series:

Part III – Emergency Management Practice
Volume 3 - Guidelines

Guide 8 - Reducing the Community Impact of Landslides

Part IV – Skills for Emergency Services Personnel

Manual 11 – Vertical Rescue (2nd Edition), Amdt No 1
(automatic distn)

(Free copies for EM agencies available through your State/Territory Emergency Service training section. Other enquiries to EMA.)

Mount Macedon Papers:

Note: These workshop records were published in booklet form for all 'Papers' on workshops held up to the end of 1998. All Mount Macedon Papers from then onwards are available on the EMA Web site.

EMA addresses for publication orders (first check above for appropriate S/T authority or EMA office):

Emergency Management Australia
PO Box 1020, Dickson ACT 2602, Australia

Australian Emergency Management Institute
Mt Macedon Road, Mt Macedon Vic 3441, Australia

individual or company whose life or property is at risk.

If the individual or company (for example, in the case of a major fire in an oil refinery) cannot deal with the emergency, then the municipal authorities are asked to help. If the emergency is beyond the capability of this level of government, requests for help go to the provincial government and, eventually, if needed, to the federal government (which can provide military assistance and emergency funding).

The common theme throughout this progression is *communications.* This may be voice or possibly video, communications between the response teams at the location of the disaster and higher level coordination centres. Or it may involve the communications.

Geomatics products, generally in the form of maps, are a vital element of the communications effort that portray where the emergency has occurred, how response teams can gain access to the site, and the means to delineate evacuation areas to on-site response teams.

Current use of Geomatics products

Geomatics is the science and technology of gathering, analysing, interpreting, distributing and using geographic information. It encompasses a broad range of disciplines, including surveying & mapping; remote sensing; geographic information systems (GIS); and global positioning systems (GPS).

Canada's Geomatics community is a recognised world leader in providing the software, hardware and value-added services. It presents opportunities in areas like land management, development planning, infrastructure management, natural resource monitoring, and coastal zone management and mapping. Canadian-developed Geomatics products and services are being used throughout the world, by clients ranging from government agencies in industrialised and developing nations to large and small businesses and remote communities.

Geomatics products include maps, in paper or digital format, showing everything from commercial site plans, administrative boundaries, municipal road systems, utilities (water, electricity, gas, telephone, etc), to more specialised information such as flood plains and seismic risk zones.

The role of Geomatics is reviewed at each disaster stage: pre-disaster (mitigation, forecasting and preparedness); disaster (emergency response); and post-disaster (damage assessment, recovery and remediation). *Figure 2* portrays the Emergency Management Cycle incorporating all stages of an emergency.

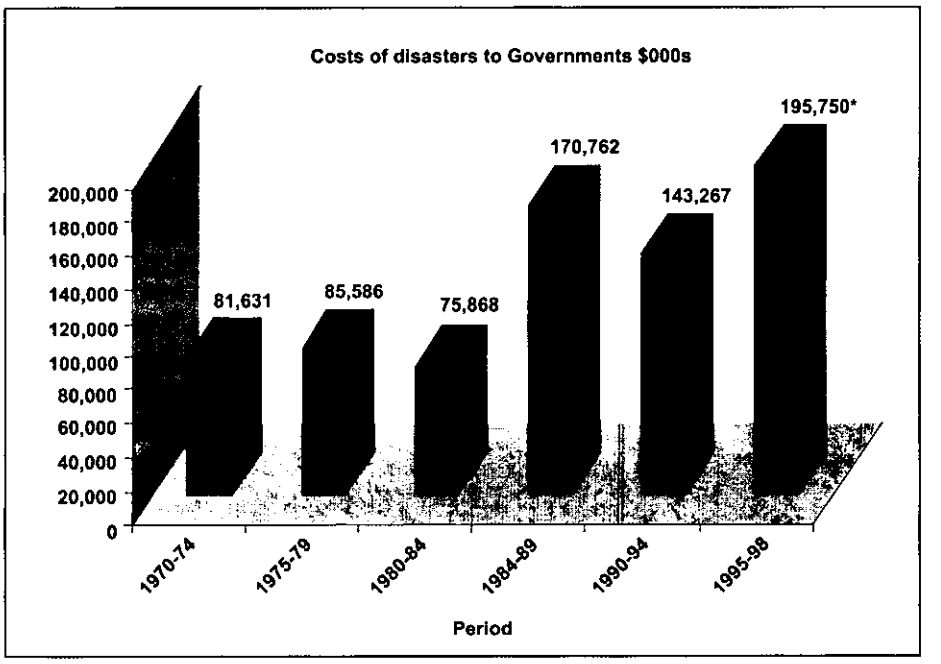


Figure 1: costs of natural disasters in Canada

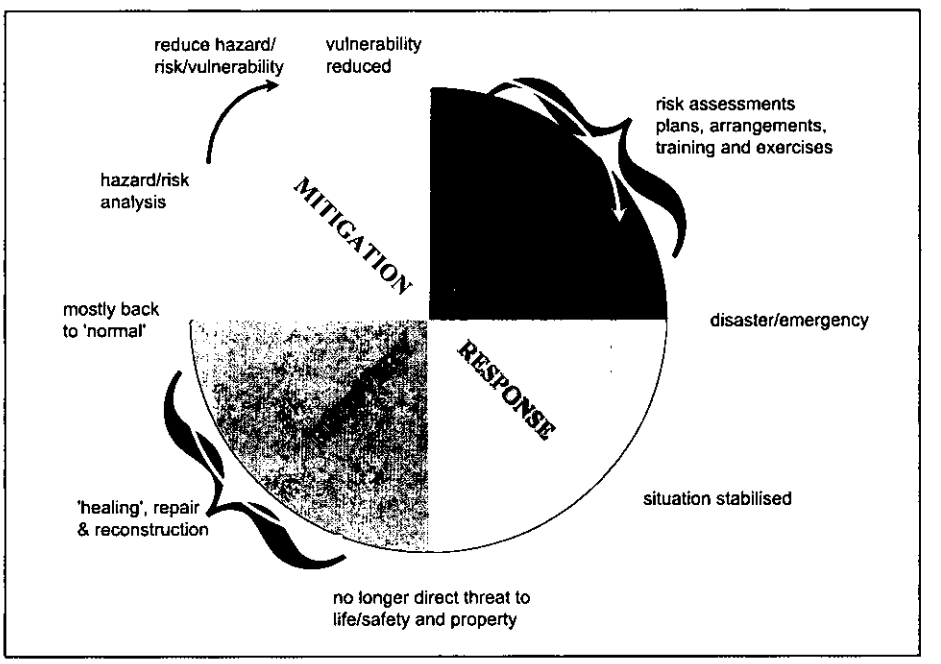


Figure 2: Emergency Management cycle

Pre-Disaster (Mitigation, Forecasting and Preparedness)

In 1998, more than 400 people across Canada participated in discussions about our preparedness for disasters. The consensus that emerged from these discussions was that a National Mitigation Policy was required.

Geomatics products, whether based on satellite imagery, air photography or ground surveys, are the foundation for disaster mitigation planning efforts. Scales range from 1:500 for detailed plant plans, electricity, gas and water utilities, through typical municipal mapping scales 1:2,000 to 1:5,000 that show individual buildings, to provincial scales of 1:10,000 to 1:25,000, and federal mapping scales of 1:50,000 to 1:250,000. Ortho-imagery of urban centres that is updated at one to five year intervals is becoming increasingly common for the larger municipalities. Digital versions of the ortho-imagery at scales up to 1:1,000 can be obtained by scanning the original air photographs. Other Geomatics products used in pre-disaster planning include geological maps, soil maps, seismic risk maps, and building code maps. Each set of data has a role in planning disaster mitigation measures.

Geographic information systems (GIS) uses computer technology to integrate,

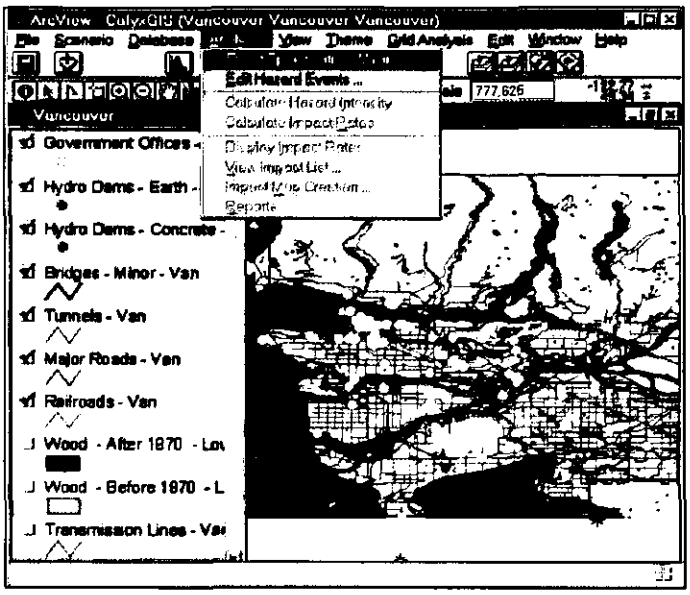


Figure 3: functionalities of the NEHMATIS system

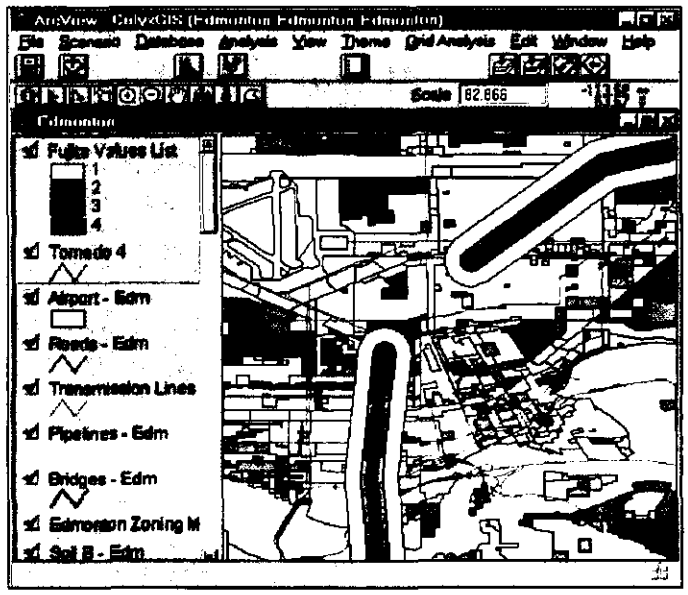


Figure 4: Applications of the NEHMATIS System

manipulate and display a wide range of information to create a picture of an area's, environment and socio-economic characteristics. GIS begins a computerised topographic map as its base, and overlays and integrates graphic and textual information from separate databases. The end result is a customised and reliable tool that can support decision making and problem solving.

GIS are becoming increasingly common as a means of overlaying and analysing different sets of spatial information. However, there are at least a dozen different software packages in common use. Fortunately, it is generally possible to move files from one system to another. For example, Natural Hazards Electronic Map and Assessment Tools Information System (NEHMATIS) is a geographic information system produced within the Canadian Framework for the International Decade for Natural Disaster Reduction.

It is an integrated suite of electronic maps and assessment tools used to assess human vulnerabilities to natural hazards and present information to a wide audience.

The system used data sources such as National Hazard Maps, Land use/Zoning, National Topographic Survey (Schools, Fire halls, roads, railways), Soil maps, Census data [population, Residential & buildings (types, age)], and Local data (hazardous materials etc.). *Figures 3 and 4* indicate some of the functionality and applications of this system.

Another system that has used remote sensing data for Flood disaster management is the Flood Emergency Remote Sensing Information Tool (FERSIT). FERSIT uses the satellite imagery in digitised form to quickly analyse near-real-time visual data relating to flood events. It incorporates ArcView GIS to allow the user to display, query, manage, store and analyse data and images. The FERSIT prototype used Canadian RADARSAT imagery, taken June 16, 1996, to capture peak spring run-off levels (possible flooding) of the Fraser River Delta (*Figure 5*).

Information Tools are important due to the fact that they are the means of integrating diverse types of knowledge and data and act as a vehicle for sharing knowledge related to emergency preparedness.

They are also an information presentation tool, a research tool and an educational tool. However, the three common problems that are encountered when trying to build a GIS database are:

- merging information from maps of different scales
- merging map information with different publication or revision dates
- when dealing with larger areas, combining information that has been processed using different map projections.

Maps showing ground elevations are vital in combating Canada's commonest type of environmental disaster, floods. The benefits of mitigation actions have been clearly demonstrated. Following a disastrous flood of the City of Winnipeg in 1950, a decision was made to build a ditch to carry flood waters around the city. The ditch cost $63 million, but has been used to divert spring floodwaters during 18 of the past 40 years, saving lives and billions of dollars of property damage.

A general flood plain damage reduction program was instituted in 1975 in response to increased disaster costs. Local authorities were encouraged to stop development in flood-prone areas. Federal funding for the program ceased in 1977 after the majority of high-risk areas had been mapped. Statistics suggest that where construction zoning has prevented development on flood-prone areas, the loss of life and property damage has been significantly lower than in areas where no such controls exist.

For instance, in 1986 there was a severe rainstorm over the Michigan-Ontario border. Rainfall, run-off characteristics, population densities, etc were similar on both sides of the border.

However, the storm caused $400 million of property damage in Michigan, but only $0.48 million in Ontario where the flood plains have been mapped and building on them is forbidden.

Disaster (Emergency Response)

Timeliness of information is the most important factor during the initial stages of response to a disaster. Consequently, traditional paper maps are the most common Geomatics resource, both in the response coordination centre and at the site of the emergency. However, the latest versions of these plans, etc may not be immediately available in the emergency co-ordination centre and the centre is faced with the problem of assembling the latest versions of these maps/plans in a place where they can be used as an aid to decision making.

With respect to satellite data, a controlled test showed that RADARSAT data could not reach an emergency co-ordination centre in less than 48 hours after a disaster. This was despite having the satellite in the right position to view

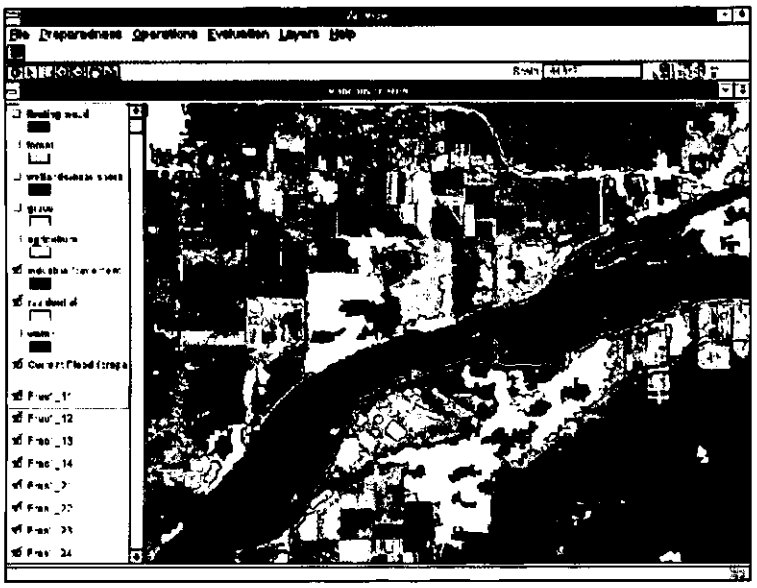


Figure 5: a demo of remote sensing in the operation of flood emergency responses to the flooded Fraser River, B.C.

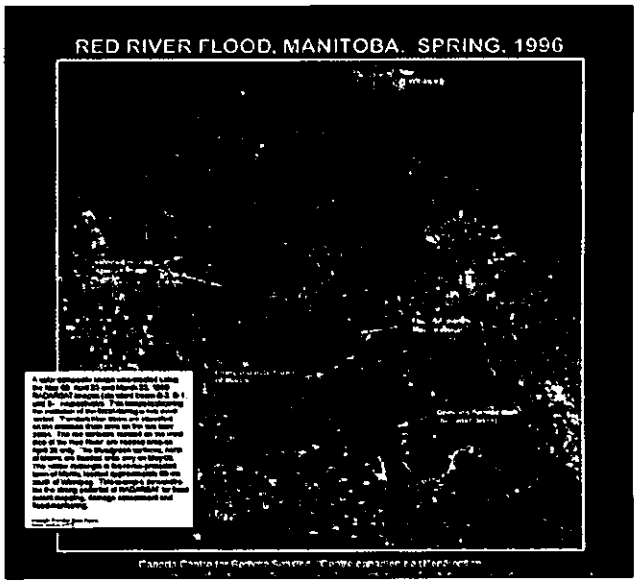


Figure 6: the Red River flood of Spring 1996 in Manitoba Canada

the site at the time of the emergency. At present, satellite imagery with the present resolution and timeliness limitations has no operational role in disaster response.

Post-Disaster (Damage Assessment, Recovery and Remediation)

It is reported that over 17,000 maps and air photographs were used in the course of dealing with Ice Storm '98 in Canada which affected an area of 300,000 square kilometres with ice up to 30 times design loads over an area of 50,000 square kilometres. RADARSAT data were obtained at the height of the 1997 Red River flood and the microwave imagery combined with that from LANDSAT to produce a poster several months after the event.

Following the recent disaster in Honduras caused by heavy rainfall from hurricane Mitch, RADARSAT imagery (which can be gathered under any light and weather conditions) was used to assess the extent of flooding in rural areas. Air photographs were used to assess damage at specific locations such as bridges (*figures 6,7,8 & 9*).

Launched in 1995, the RADARSAT earth observation satellite was developed under the management of the Canadian Space Agency, and provides Canada and the world with an operational radar satellite system capable of timely delivery of large amounts of data.

At the heart of RADARSAT is an advanced radar sensor called Synthetic Aperture Radar (SAR), which provides its own microwave illumination and thus operates day or night, regardless of weather conditions.

RADARSAT-1 circles the Earth at an altitude of 798 kilometres and an inclination of 98.6 degrees to the equatorial plane. With its sun-synchronous orbit, RADARSAT's solar arrays are in almost continuous sunlight, enabling it to rely primarily on solar power.

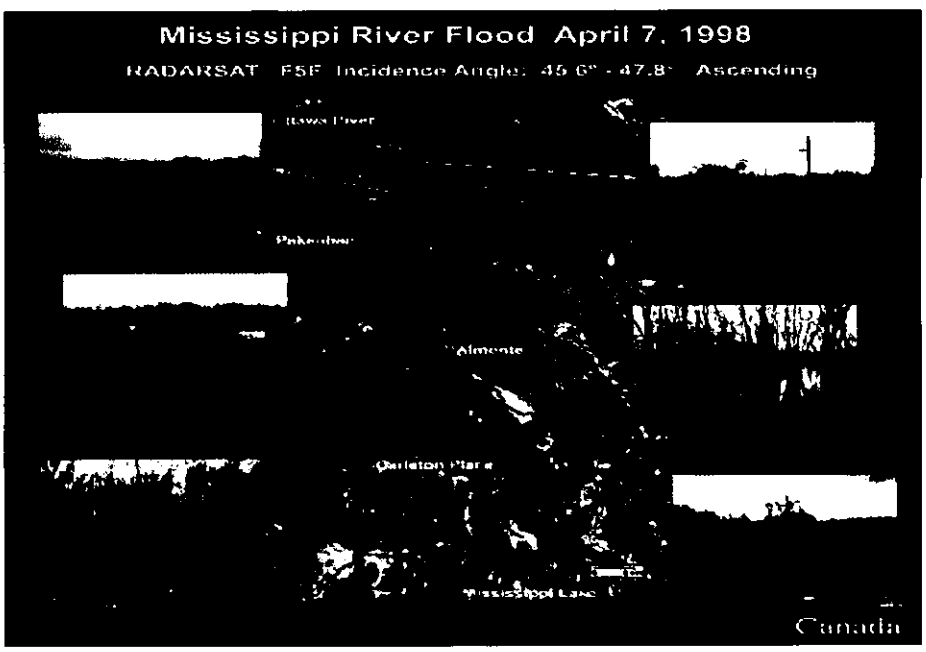


Figure 7: the Radarsat image showing the Mississippi River flood of April 1998

The satellite's SAR has the unique ability to shape and steer its beam from an incidence angle of 10 to 60 degrees, in swaths of 45 to 500 kilometres in width, with resolutions ranging from 8 to 100 metres.

Geomatics use in the 21st century

The major role for Geomatics will continue to be in support of pre-disaster planning: mitigation, forecasting and preparedness. The use of sophisticated technology under emergency conditions will increase, but will evolve slowly outside the major urban areas. The use of computers for geographic information systems for planning purposes will increase, which means that the demand for digital map products will increase. The increased use of GIS will also lead to more sophisticated pre-disaster planning activities, including the use of simulation models. The resolution and timeliness of satellite imagery will improve and will find increasing use in the pre-disaster planning phase.

Emergency Preparedness Canada is developing a computer-based model to simulate various environmental and man-made disasters as a tool to help plan for possible emergencies. This model simulates the damage caused by an earthquake

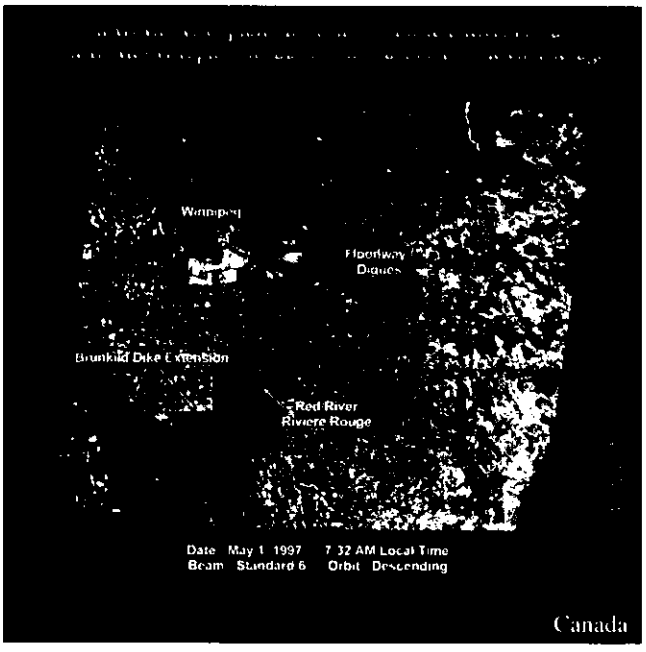


Figure 8: RADARSAT image of Red River flood of 1997

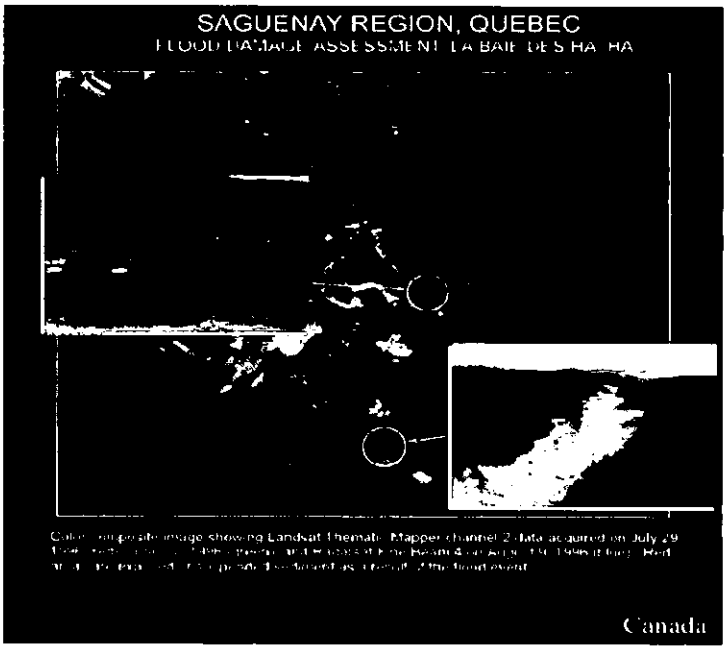


Figure 9: satellite image of Saguenay flood of 1996

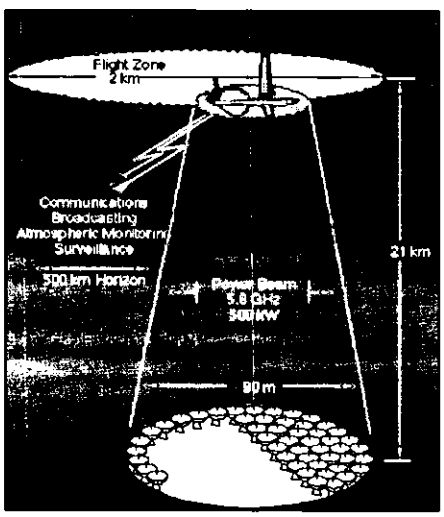


Figure 10: the SHARP system

near Vancouver. The simulation estimates such things as building damage (based on building codes at the time of their construction), possible damage to bridges over the Fraser River, and floods due to damage to dykes along the river.

Communication is the most important aspect in emergency response and post-disaster operations. Microwave powered aircraft such as the flying PEANUT and Stationary High Altitude Relay Platform (SHARP) provide an alternative system for provision of wireless communications services.

SHARP is an unmanned aircraft circling at 20 km altitude and could provide new surveillance and remote sensing applications in emergency situations. It has a long endurance (1-year) for cost-effective reliable operations and provides a wide-area communications coverage of up to 600 km in diameter (*Figure 10*).

The following services could be provided on an integrated basis by SHARP. Cellular telephone and personal communications (PCS) extension to rural/remote areas (Single-cell or multiple cell coverage; Wide-area relay (cell site to network centre); Wide-area mobile radio; Wide-area paging; Broadband multimedia services (Point to point & point-to multipoint (12, 20, 30, 40 GHz); Wide-area digital TV broadcast (NTSC, HDTV, 12/20 GHz) and Digital audio broadcast (1.7/12/20 GHz).

Non-communications applications of SHARP include: atmosphere monitoring (such as greenhouse effect gases and ozone depletion); remote sensing (e.g. Forest fire detection, ice reconnaissance and crop studies) and radar surveillance (such as coastal economic zone enforcement, sovereignty assertion (air, land and sea) and military surveillance applications (security).

As disaster response becomes more sophisticated, it is possible to envisage emergency coordination centres having their own remotely piloted vehicles (RPV) that can be launched from the roof of their building.

Using existing technology, such an aircraft could be positioned using GPS and could carry a small video camera and transmitter, similar to that used by television companies for sporting events.

One can envisage a computer display showing the digitised map of the disaster area with the position of the RPV superimposed.

At the same time, an inset on the screen could show the video images transmitted by the RPV, giving the response co ordinator first hand information from the site of the emergency.

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Personal Communication, February, 1999, Dr Chris Tucker, Senior Science Advisor, Emergency Preparedness Canada.

Personal Communication, February, 1999: Paul Kovacs, Executive Director, Institute for Catastrophic Loss Reduction.

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This article has been refereed

Managing natural hazards in the Hawke's Bay, New Zealand

by Lisa Pearse, Emergency Management Coordinator, Hawke's Bay Regional Council, Napier, David Johnston, Scientist, Institute of Geological & Nuclear Sciences, and Julia Becker, Scientist, Institute of Geological & Nuclear Sciences, Taupo, New Zealand

Introduction

The region of Hawke's Bay lies on the East Coast of the North Island of New Zealand covering a land area of 1,416,336 hectares. It is arguably one of New Zealand's warmest regions, with surf and sun, vineyards and orchards and a range of outdoor adventures from windsurfing to trout fishing. In addition, the Hawke's Bay houses some of the most concentrated collections of Art Deco and Spanish Mission architecture anywhere in the world. Top that with views over the sparkling Pacific Ocean, fresh produce from the hinterland, friendly people, productive rural communities and an abundance of sparkling aquifer water and you know why 143,240 people (1996 census) have chosen to make Hawke's Bay their home.

Despite the many attractive reasons that Hawke's Bay is a great place to live, it is also a region that is often impacted by the forces of nature, whether it is in the form of earthquakes, flooding, drought, or volcanic eruptions (Johnston & Pearse 1999). Moreover there have been numerous significant events in the past, which have highlighted the community's vulnerability to these hazards. The following snapshot outlines Hawke's Bay's substantial history of natural hazard adversity.

Historic events

In 1863 a magnitude 7.0 earthquake occurred in Hawke's Bay (with the epicenter located near Waipawa), causing numerous landslides, liquefaction and surface faulting. Several years later in 1904 a magnitude 6.7 earthquake centered off Cape Turnagain, caused damage to chimneys, buildings and roads throughout southern Hawke's Bay from Masterton to north of Napier . Following this, a significant earthquake of 7.0 magnitude occurred in Central Hawke's Bay in 1921.

In 1931 parts of Hawke's Bay were devastated by a magnitude 7.8 earthquake, which caused the loss of 256 lives and destruction and major damage to property. Tsunami were also experienced as a result of this earthquake. Along with assistance from outside the region, the Hawke's Bay community showed its resilience at the time by rebuilding itself and is thus the reason why the region is now internationally renowned for its architecture.

In 1932 a magnitude 6.9 earthquake, centred near Wairoa, damaged buildings in Wairoa and Gisborne and caused landslides and the collapse of the Wairoa River bridge. Following this event, another large 7.6 magnitude earthquake struck Pahiatua in 1934.

In May 1960 a distantly generated tsunami originating off the coast of Chile caused damage when it reached New Zealand shores. The tsunami wave broke gas mains and a footbridge in Napier and damaged and moved pleasure boats and buildings.

Volcanic ashfalls from Mount Ruapehu in the central North Island affected the region in 1945, 1975, 1995 and 1996, and ash from Tongariro reached the region in 1896.

Flooding and storms, the most frequent natural hazard events in Hawke's Bay, have impacted the region continually since it has been inhabited. Flooding occurred in 1867, 1893, and 1897 where 356mm of rain fell in Napier over four days. During this latter event the Ngaruroro River broke its banks and flooded Hastings, while the Tutaekuri River broke its banks and joined with floodwaters from the Ngaruroro River to flood Clive and Napier. Floods also occurred in the following years of 1917, 1924, and 1936. The 1938 Esk Valley floods produced widespread flooding after three days of heavy rain throughout the region with exceptional falls in some areas—in 3 days 610 mm fell at Tutira and a staggering 1,000 mm at Puketitiri (with 390mm in one day). Further flooding occurred in the years of 1941, 1948, 1953, 1974, and 1980 where rainfall at Whanawhana was recorded at 157mm in 48 hours and the Ngaruroro River breached the stopbank at Twyford resulting in serious flooding. The latest significant episode of flooding was during Cyclone Bola in 1988 where the highest rainfall for the three day period was recorded as 635 mm at Pukeorapa. The township of Wairoa was flooded and extensive landslides throughout the region severely impacted farming.

The range of geological and meteorological natural hazards present in Hawke's Bay continues to pose a significant threat to the region and as our society becomes ever more complex the potential economic and social costs of disasters increase every year.

Understanding its risk

There are five local authorities in the Hawke's Bay, which include one regional council (Hawke's Bay Regional Council), and four territorial local authorities (Napier City, and Hastings, Wairoa and Central Hawke's Bay Districts) (*figure 1*). Under the Resource Management Act 1991, both the regional council and territorial authorities have responsibility to manage natural hazards, controlling the use of land for the purpose of avoiding or mitigating (reducing) natural hazards (*figure 1*). Local Authorities in Hawke's Bay

Until 1990 the Hawke's Bay community simply lived with the prospect of experiencing natural hazards and had responded to and recovered from the impacts of some very significant events, but the concept of risk was not fully understood. Recognising that hazard identification and risk assessment are the cornerstones of mitigation, and with the enthusiasm of a few visionaries in the region, local authorities in Hawke's Bay were among the first in New Zealand to recognise the need to understand more about the region's natural hazards. They believed that once they understood more about the risk with which the community was living, they could minimise the economic and social disruption. Therefore a joint initiative instigated a program of identifying and

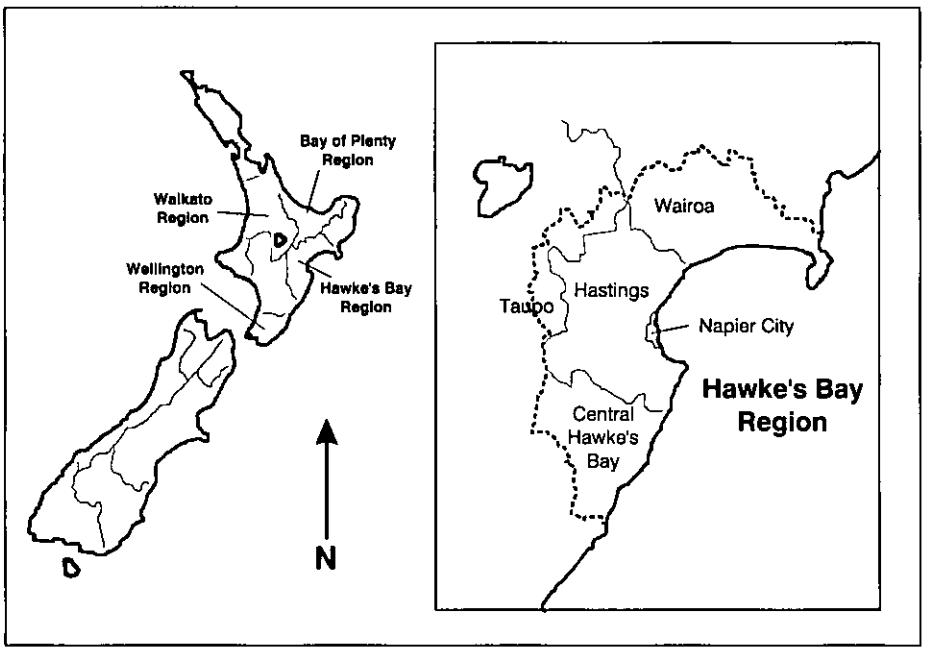

Figure 1: map of Hawke's Bay local authorities.

quantifying the more significant regional hazards, including earthquake, tsunami and volcanic hazards. This program ($NZ 600,000) was completed in 1998 (van Voorthuysen 1994), and local authorities have made a commitment to monitor and review its findings in the future.

Effective use of natural hazard information

The program produced a series of scientific natural hazard reports, which though extremely informative and revealing, were largely incomprehensible to the general community. As a consequence, the region still faced a two fold problem: how to better educate the general community about its risk and necessary mitigation; and how to effectively incorporate the natural hazard information into regional and territorial plans and policy statements to ensure implementation of essential natural hazards policy.

Community understanding

In 1999 the Hawke's Bay Regional Council produced one initiative—a publication entitled 'Natural Hazards in Hawke's Bay' (Johnston & Pearse 1999). The aim of this publication was to inform the Hawke's Bay community of their risk from natural hazards so that people, both individuals and organisations, could better prepare themselves, thus reducing any disruption that may result.

The publication presents information not only on the three more significant hazards: earthquakes, tsunami and volcanoes, but includes sections on flooding, landslides, coastal erosion and other meteorological hazards including high winds, snow, hail and drought. It discusses general risk management principles and what individuals and organisations should do to prepare for the next disaster. It aims to present natural hazard information in an informative and interesting manner, and is full of glossy photographs and diagrams.

This publication has been provided free for use in Hawke's Bay schools, educational institutes and libraries, through sponsorship from the New Zealand Earthquake Commission. It is also available via the Hawke's Bay Regional Council's website (www.hbrc.govt.nz). The publication is now widely used by Civil Defence and Emergency Management staff in the region to educate individuals about hazards, and businesses and community organisations about business continuance planning.

In 1998, the Hawke's Bay Regional Council assisted in establishing a group known as the Hawke's Bay Engineering Lifelines Steering Committee (Adye 2000). This group made up of regional infrastructural owners took on the challenge of risk assessment, essentially creating an inventory of existing structures in identified hazard areas to provide a basis for mitigation plans and priorities.

To further understand how the community may be affected by future hazard events several studies have been undertaken to assess the public's perceptions of hazards and their preparedness (Johnston *et al.* 1999, Ronan *et al.* 2001)(*figure 2*). This information can be used to evaluate the effectiveness of future mitigation and risk communication programs. It can also be used by emergency management professionals to assess community needs, develop strategies and plan the allocation and use of resources in preparing for future events.

Local Authority planning & policy

Planning in advance is one of the most effective means of avoiding or mitigating any adverse effects from natural hazards. A research project is currently underway to look at the different approaches of New Zealand local authorities when planning for natural hazards. The results will assist in defining which measures are successful with regard to natural hazard management in New Zealand and identifying the barriers to formulating and implementing hazard policies. The results from planning and policy research will have a direct application for regional and local authorities throughout New Zealand.

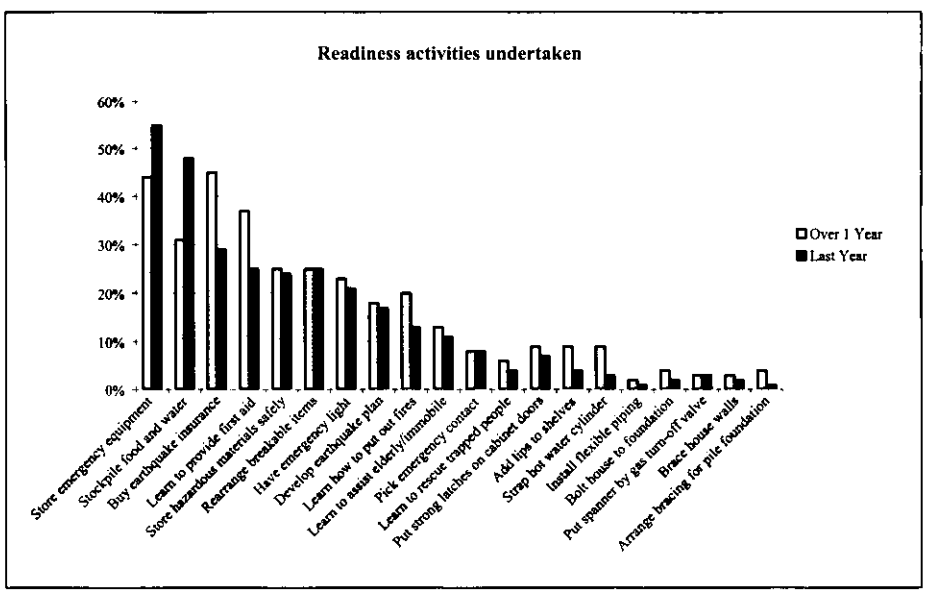

Figure 2: Readiness activities undertaken in the last year and over 1 year ago. Data from a 1999 survey of earthquake preparedness in the Hawke's Bay (Ronan et al. 2001)

For the project, an initial study was conducted, which involved analysing how twenty-four regional and district councils located in the Hawke's Bay, Bay of Plenty and Waikato regions address earthquake hazards (Becker and Johnston 2000). Future work will expand on the earthquake study and will involve looking at how authorities plan for a wider range of natural hazards. Hawke's Bay will be the first region to be involved in this wider research which will involve studying local plans and policy statements to look at their hazard content and interviewing staff at local and regional councils to collect information on the other influences of hazard policy adoption. From this, it will be possible to identify barriers to the effective implementation of natural hazard policy and compile a set of 'best practice' guidelines for natural hazards.

Continuing research

Despite the improvements in our knowledge of natural hazards and their risk, much is still to be learnt. An integral part of Hawke's Bay's hazard management strategy is sound research. The regional council and local authorities are working in partnership with Crown Research Institutes, universities and other research providers to continue research into the wide range of hazards, their effects and management. This includes support not only for physical sciences but also the social sciences.

One of the keys to improving future risk assessments is exploiting the power of Geographic Information Systems (GIS) by integrating data on the natural, built and social environments to generate new information based on the interaction between a multitude of layers. This work has already commenced with the Hawke's Bay Engineering Lifelines study and is a natural progression for the region, following on from the past decade's hazards identification work. Further project work of this sort will allow the councils to explore in more detail consequences of events and evaluate the impact of mitigation measures and policy changes.

Summary

For hazard management strategies to be effective the hazards must be well understood. Prior analysis of the hazards and their potential impacts will provide the vital information needed for planning to minimise the unexpected. The regional council and local authorities are working together to develop an integrated approach to managing natural hazards in Hawke's Bay, linking sound research, sensible planning and community education.

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Figure 3: Houses in danger (between Haumoana and Te Awanga) 1974.
From 'Natural Hazards in Hawke's Bay', photo–Hawke's Bay Herald Tribune

Figure 4: The Hawke's Bay Regional Council repairs the Ngaruroro stopbank with dandbags during Cyclone Bola in 1988. This photo also shows how stopbank schemes protect horticultural land in Hawke's Bay.
From 'Natural Hazards in Hawke's Bay', photo–Hawke's Bay Regional Council.

Doing it by the book: a paradox in disaster management

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The disaster event

Gracetown is a small seaside township on the south-west coast of Western Australia. Margaret River, 20 kilometres away, is the nearest town. On Friday September 27th 1996, the last day of the school term, Year 7 students from the Margaret River and Cowaramup primary schools were at Huzza's Beach at Gracetown participating in a surfing carnival. It was cold and raining and organisers, concerned about the weather, had changed the venue for the carnival from the mouth of the Margaret River to Huzza's. The limestone cliff face had absorbed large amounts of water from rainfall over the preceding few days and at about 2.45pm, while some of the students, teachers and organisers were sheltering under an overhang, it broke away sending tonnes of rubble down on top of them.

Immediately, the hospital in Margaret River was notified and local emergency response groups (police, State Emergency Service, Volunteer Fire and Rescue Service, St John's Ambulance Association) activated their emergency management procedures. By the time these groups arrived, locals had begun the rescue effort. According to the Police Log, by 4.30pm the rescuers had removed four bodies from the rubble and a young girl was found alive with only minor injuries. As it got dark, rescuers set up portable lighting and used heavy earth moving equipment to dig through to the base of the cliff looking for more bodies or survivors. An excavator kept digging until 7.20pm, although by 6.40pm the nine bodies had been recovered and no other survivors were found.

An on-site morgue was established at the beach and the bodies were covered with tarpaulins to await the arrival of the Disaster Victim Identification Unit from Perth. Against the advice of local police officers, the decision was made in Perth to send the DVIU, pathologist and Coronial Inquiry Sergeant to Gracetown by car rather than helicopter. Had they travelled by helicopter, they would have arrived at about 5.00pm, soon after the media helicopter. As it was they had to drive over 300 kilometres through heavy rain and thick traffic (it was the beginning of a long weekend and school holidays), arriving close to midnight.

Introduction

This article draws on material from the research report: 'It's not enough to just follow the rules: An evaluation of the human service response to the Gracetown cliff collapse' (Palmer 2000). In this study, I used data from individual and group interviews (with service providers and bereaved family members) and document analysis in an attempt to understand how human service agencies responded to the Gracetown cliff collapse.

In the report, I first re-presented the participants' experiences of the response and recovery process by framing them within three key post-event phases: the initial response (Friday night and Saturday); the short-term aftermath (a period of recovery) and the longer-term aftermath (a process of resignation). I then made a series of recommendations which explicitly acknowledged the power differences between agencies concerned primarily with crisis control and those concerned with the care and support of victims and the bereaved.

In writing this article, I discuss how responding to a disaster can be seen as a highly complex and contradictory process.

Paradoxically, what worked and what didn't work at Gracetown can be attributed to the same thing — service providers responding 'by the book'.

Theoretical framework for the study

The literature on disasters and disaster management covers a wide range of interests and perspectives. According to Edwards (1998), the academic literature tends to have either a medical-psychological orientation or a sociological orientation. The former focuses on individuals' coping or adaptive behaviour to a disaster. The latter focuses on organisational and community responses to a disaster and the ways in which these responses may exacerbate or ameliorate the inevitable stresses and traumas associated with a disaster.

Much of the psycho-medical literature is based on a positivist science which looks at the relationship between a range of variables relevant to the individuals involved in a disaster (such as age, gender) and experiences (body viewing, body handling, bereavement) and levels of coping or illness (such as post-traumatic stress disorder). Much of the sociological literature is also positivist in design and uses quantitative data and network analysis to develop frameworks for understanding and predicting organisational responses. Davis and Scraton (1999) are critical of the style and focus of much disaster research:

> Here [in disaster research and theorisation] the emphasis is on the reestablishment of control. Disaster is the province of experts. From the tasks of risk assessment and emergency planning, to the practice of post-trauma therapy, experts define and process the 'material' of disasters: people. Disaster academics and professionals define and locate solutions in the application of technocratic systems and strategies. (p.87)

However, some disaster management literature is beginning to reflect the influence of critical social science which centralises the issue of contested power relations. These studies look at the ways in which certain groups, during a disaster, are denied the power to claim the space to negotiate, particularly with the 'cardinal' organisations such as the police (Britton 1985) who effectively control disaster sites for a period of time after the event. There is also now more material published based on qualitative, descriptive data which aims to provide some insight into the activities and experiences of individuals, groups, organisations and communities that experience a disaster.

Davis and Scraton's work reflects this kind of approach. They researched disaster responses in the United Kingdom,

focusing particularly on the 'functional, mechanistic and quasi-military rationale behind site management, communication and the process of [victim] identification' following a disaster. In their research on the formal responses to the disasters at Hillsborough, Lockerbie, with the *Marchioness* sinking and more recently at Dunblane, they have noted the ways in which 'the psychological and material needs of the bereaved and survivors are subordinated to the professional priorities of regulatory agencies, particularly the police' (p. 86).

I approached this study as a social work academic with a strong interest in critical post-structural social theory. The research report didn't try to represent a 'truth' about what happened following the cliff collapse. Rather it brought together some people's recollections for reflection and analysis by myself as the researcher. Given my own theoretical framework, it was not surprising that I was drawn to the work of Davis and Scraton (1999) and focused on the socio-political aspects of the disaster response (for individuals, organisations and the community); drawing conclusions from the study and making recommendations which reflected that focus.

What worked: doing it by the book

As noted above, the human service response at Gracetown 'worked' because service providers responded 'by the book'. An inter-agency team of local and regional professionals (including the police who were the lead response agency until the Saturday evening) worked to implement appropriate response and recovery procedures. Within twelve hours of the disaster event, all of the victims had been identified, all survivors accounted for, care and support offered to the bereaved and rescuers, the media 'managed' (as much as possible) and a recovery centre established.

An extremely competent recovery manager emerged from within the recovery team and over the following days and weeks the recovery centre, staffed by counsellors from the local area and the region, operated a telephone helpline and drop in facility. This centre provided information about grief and loss, particularly to parents who were concerned about the impact of the disaster on their children. The centre also managed offers of help coming from the community and around the State. A counsellor worked with the bereaved families and in consultation with them, the recovery team coordinated a memorial service at Huzza's Beach on the Thursday following the cliff collapse. Debriefing sessions were held at the Gracetown Hall and at the schools. There was an awareness that disasters can reactivate past traumas and mental health agencies stayed alert to the need for additional services within the community. There was also a process of assertive outreach to try and make contact with rescuers who had not been part of the formal rescue effort.

Thus, the recovery process included the recognised key elements of a disaster recovery program as outlined by Creamer et al. (1991). The recovery process took account of the community's need for exposure (through debriefings), information, education, social support (through the Recovery Centre), restoration of control through decision making (the site for the memorial service, the management of the Disaster Relief Fund) and the availability of professional assistance.

Over the following twelve months, workers in the Margaret River area continued to provide support to bereaved family members and others affected by the disaster. A six-month anniversary service was held at the beach and counsellors offered support to family members at the inquest which was held in April 1997. The communities affected have continued to hold annual memorial services and sites of remembrance have been created at the local schools and at the head of the stairs which lead down to Huzza's Beach.

Of course, there were many things which in hindsight, people thought could have been done differently or better. Individual experiences are only a part of the whole picture and things which worked well for some of those most affected, did not work so well for others. For example, some bereaved family members welcomed the opportunity to meet as a group to debrief and grieve together.

Others felt that this was overwhelming and would have preferred a stronger push towards individual or family counselling. Overall, however, in undertaking the research I had a strong sense that the recovery process had 'worked' and that it had been:

> 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 support (Emergency Management Australia 1996, s.1.03).

What didn't work: doing it by the book

As with most diasters, communication became a serious problem almost immediately after the cliff collapse. The location of the beach below high limestone cliffs and hills, made radio contact between the beach and Margaret River extremely difficult. As news of the disaster spread beyond the local community, media calls to the police station and hospital jammed all telephone lines. One consequence was that the hospital was on alert for several hours anticipating an influx of people with severe injuries when there were very few injured (Scott 1997). Also as a result of communication difficulties, the local police were unable to take any advice from the Disaster Victim Identification team, which was travelling down by car, about the management of the temporary morgue, victim identification or contact with the bodies by bereaved family members.

> There have ... been descriptions of official processes instituted which have caused additional trauma and distress for the families of those killed, and, I believe, have disempowered these people in their recovery and grief. ... Family members have described how they were refused access to the beach and not permitted to go near the bodies once they were recovered. They were kept waiting for hours after the recovery because none could be shifted until a Police Department officer arrived from Perth, three and a half hours away. Families were sent home, then required to come to the local hospital in the middle of the night to identify the bodies ... (Monson 1997, p.285)

Contact with the deceased

Bereaved family members interviewed for the study expressed concern that they were denied access to the bodies on the beach when the rescue effort was over. Overwhelmingly, they thought that the decision to go onto the beach and sit with the deceased should have been theirs and not a police officer's.

> After we had waited at the site for three to four hours and they had recovered all the bodies, we expressed our desire to see [our daughter's] body and asked if they could bring her up to us or if we could go down to see her on the beach. But we were refused and they (authorities) told us to go home and wait. ... What I would have liked is for someone to have taken me down to the beach. Then I could have made my own decisions.

(A bereaved parent cited in Palmer 2000, p. 15)

The condition of the bodies as a result of the injuries was the principle reason given at the inquest for denying families access to the bodies once public safety was no longer an issue. State Coroner Alistair Hope supported the police in their decision to deny access to the bodies at the beach.

> [A police officer] was certainly of the view that access should not have been allowed. He said that having viewed the bodies laid out in a temporary mortuary himself, he did not believe that families should have viewed bodies in that location and in the condition which they were then in. .... He said that he would not have wished to have seen his own son, had he been killed in the cliff collapse, at that temporary mortuary. (Hope 1997, p. 15)

Davis and Scraton (1999) found that this was a common occurrence in a disaster situation, that police and other well meaning professionals felt that it was their right to make decisions rather than to support the bereaved to make decisions that were right for them.

> It was a fact that some of the bodies were severely damaged, bruised and disfigured , and therefore there was a need for a controlled process of viewing the bodies. With nine (9) deceased people laying on the beach in a temporary morgue situation, there was no mechanism for control. Further to this the bodies had not been formally identified through the Disaster Victim Identification Process ... (A police officer cited in Palmer 2000, p. 16)

Davis and Scraton (1999, p. 93) suggest that the decision to deny the bereaved access to the body of a disaster victim (particularly at the site), while ostensibly made to protect the bereaved from distress, is more likely made to protect 'professionals' from the distress of having to deal with intense expressions of grief and loss.

Victim identification

Another significant decision made by agencies trying to 'control' the disaster on the night, was to attempt to withhold the names of those who had died until after the formal victim identification had taken place. As this process did not begin until the early hours of Saturday morning, 10 hours after the accident, the lack of confirmation that their loved one had died, was particularly distressing for the bereaved. The Coroner agreed at the inquest that 'it is clear that the families were not provided with adequate information' (Hope 1997, p. 16).

Much of the distress for families came from knowing that people knew that their loved one had died, but that they were unable or unwilling to acknowledge this fact to them.

> No one contacted me. I heard at about 5pm that there had been an accident. It never occurred to me that [he] might have been killed. I just assumed he would be involved with the rescue .... But when I got to the beach, the way they looked at me and just let me through, I knew then. But no one actually came up to me and told me. I just got shunted between the hall and the beach. I eventually went home and then someone told my son that he should tell me that his father had died. (A bereaved partner cited in Palmer 2000, p. 20)

The decision to maintain strict adherence to the formal processes of victim identification, to do things 'by the book, was one of the hardest things for people involved with the disaster—families and helpers—to understand. Families felt let down by *those in authority* and many helpers (hospital staff, counsellors, friends) felt that they betrayed their neighbours and friends by not passing on the much needed information so that people could begin the process of grieving for their partner, parent, son or daughter.

> At 2000 hours the morning [hospital] staff went home, none of us could stand the imploring eyes of the relatives. We knew the names of the missing but were not allowed to reveal any information what-so-ever to the relatives as per police orders. Some relatives went home to wait. (Scott 1997, p. 9)

> We've heard that the rescuers were told not to come and talk to us. A lot of them have felt really bad. (A bereaved parent cited in Palmer 2000, p. 20)

Imploding the cliff face

Overnight, the police had posted a guard at the site and arrangements were made to implode the cliff face to make the site safe for the public. Like a lot of the decisions that had been made during the night, the decision to implode the cliff face was made without consultation with the bereaved families.

It is possible that whoever made this decision was unaware of the significance of the site to the bereaved. However, people writing about grief and loss make reference to the significance of the place of death for those people who have lost family or friends in sudden or tragic circumstances. According to Swalling (1997), these sites are significant because they represent the last place the person was alive, the last place they saw. Family members interviewed for the Gracetown study expressed deep regret that they had been unable to visit the site as it had been at the time of the deaths.

> They had guards down on the beach the next day. We watched Thredbo with a lot of interest. There, they took the families to the site, to walk them around. (A bereaved parent, cited in Palmer 2000, p. 36)

> The following day, they blew up the site. No family member knew that was going to happen. No one asked if we wanted to look at it. To take photographs. To know what they were buried in. It was all blocked off. They think they are trying to protect us. (A bereaved partner, cited in Palmer 2000, p. 36)

The Sunday Times on 29th September carried a picture of Premier Richard Court being escorted around the disaster site before the implosion. Davis and Scraton (1999) noted that after Lockerbie, the 'frustration and anger over difficulty in accessing the disaster site was exacerbated by the unquestioned access given to visiting politicians, dignitaries and royalty' (p. 93).

Recommendations

The main recommendations to emerge from the study challenge disaster response and recovery agencies to find ways to reposition crisis support ahead of (or alongside) crisis control following a disaster. During a disaster and in the immediate aftermath, crisis control strategies are often essential to maximise the chance of finding survivors and minimise further harm to victims, response agents and/or the public. However, once the initial crisis is over (survivors found and the site safe) then a crisis control approach is unlikely to be helpful and may even be harmful. Davis and Scraton (1999) summarisd the experience of the bereaved interviewed for their study on disaster management in the UK.

In the personal reflections of the bereaved and survivors ... it is clear that such is the impact of insensitive and inappropriate crisis management in the immediate aftermath it is difficult to distinguish between these experiences

and those of the disaster itself in causing extremes of human distress. (Davis & Scraton 1999, p. 95)

The Gracetown study recommended a number of ways in which this re-thinking of the power relationship between crisis control agencies and crisis care agencies (and between agencies and the people they have been set up to serve) could be achieved.

Charter for the Bereaved

In their report to the British Home Office in 1997, Davis and Scraton made a series of recommendations to deal with the power differences that emerge during a disaster response. Central to these recommendations was the need for 'the voices of the bereaved and survivors, the "view from below"' to be heard in planning and preparation for the disaster aftermath (Davis & Scraton 1999, p. 94). One of these recommendations was for the development of a Charter for the Bereaved. This followed extensive consultation with the various campaign and advocacy groups that have emerged in the UK following disasters in recent years.

> While broadly marking the significance of rights, a Charter would provide a clear overview of the statutory role and obligations of key agencies, alongside the recognition of the rights of the bereaved. The latter would include rights to full and detailed information, access and viewing of bodies, consultation over post-mortems and return of bodies, access to the disaster site, crisis support and privacy. (Davis & Scraton 1999, p. 94)

Training of workers involved in crisis control

As the bodies had been moved after the discovery, there was no forensic purpose to be gained by leaving the bodies in the area of the disaster. ... Unfortunately the bodies were left at the temporary mortuary pending the arrival of the pathologist. (Hope 1997, p. 17)

At the inquest, Coroner Hope criticised the decision to send the victim identification team to Gracetown by car and recommended protocols to ensure that in the future, they would be despatched by 'the most expedient means' (Hope 1997, p. 3). On the night of the disaster, it must have been obvious to experienced police officers (who were acting for the lead agency) that the decision to send the team by car had been a serious mistake. What stopped them from taking the necessary action to support the bereaved (moving the bodies to the hospital or at least beginning a process of informal identification that would allowed access to the deceased) given that their senior officer's decision had so clearly been a mistake? Although it was beyond the scope of the study to explore this question, it is easy to imagine how difficult it would have been for junior or middle ranked officers to make decisions which countered their superiors in such a stressful and public environment.

The study report recommended that the WA Police Service extend the training of staff in issues of grief and loss so they are better able to prioritise the needs of the bereaved following a sudden death once community safety is assured. It also recommended that the WA Police Service review the training of staff to include some critical analysis of the limitations of hierarchical decision making and control. It was considered that this may assist police officers (and others who work in organisations involved in disaster response) to feel empowered to use their professional judgement even when it means not following the rules. Clearly this is going to be difficult to achieve. How likely is it that hierarchical and quasi-military organisations will train their staff to 'problematise' their own culture?

Connections between response agencies and the bereaved

Both the police and family members acknowledged the need for more positive interaction between the response agencies and the bereaved families following the disaster. Family members saw this interaction as a way of providing them with the detailed information they wanted about the rescue and body recovery process. The police saw this interaction as necessary to counter the 'over-counselling' which they felt had excluded and marginalised them during the recovery phase.

Despite the different reasons put forward for this proposal, it seems to have merit. The bereaved, rescuers and helpers are all potentially 'victims' in a disaster and providing opportunities for these groups to meet would seem to enhance the natural support systems that can operate, particularly in a small community. Thus, the study report recommended that recovery managers consider ways in which emergency workers and family members can interact following a disaster, either as part of the formal debriefing structure or through other processes.

Opportunities for healing when grievances occur

The EMA *Disaster Recovery* manual doesn't offer strategies for community conflict resolution and yet this would seem to be an important aspect to include given the tensions and grievances which often emerge in the aftermath of a disaster response (Gordon & Wraith 1987). At Gracetown, the police felt that they were blamed for the delays in victim identification. Bereaved families felt that their needs were minimised on the night of the tragedy. The inquest provided some opportunities for people to hear the stories from 'the other side'. However, in the aftermath of the disaster, grievances have remained with little opportunity for reconciliation and healing unless someone is able to take the initiative and establish the necessary dialogical processes.

The study report recommended therefore, that Emergency Management Australia include the issue of community conflict resolution and healing processes on its research agenda with a view to including relevant guidelines in the *Disaster Recovery* manual.

Conclusion

> *Once again we come to the word compassion. It's not enough to just follow the rules. (A bereaved relative cited in Palmer 2000, p. 66)*

The research project on which this article is based was undertaken to try and understand how human service agencies respond following a disaster. Thankfully, there is a rule book about how agencies should do this and at Gracetown, they 'did it by the book'. An inter-agency team came together following the cliff collapse and using their combined knowledge, skills and compassion, were able to respond effectively to the very diverse and complex needs of the community.

However, there are times when it is not always appropriate to follow the rules. If we take this paradoxical view, then we create contradictions and tensions which may be very difficult to understand and manage. Notwithstanding this difficulty, it seems that there is a need to include in the training of disaster response and recovery workers, mechanisms by which they can recognise and become more comfortable with the contradictions and tensions inherent in their work.

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About the author

In late 1997 I drafted a proposal to evaluate the human service response to the Gracetown cliff collapse and applied for a Small Research Grant through Edith Cowan University. When I began the study, I was interested in finding out how a small community manages a disaster response and recovery process.

At the time of undertaking the study, I taught in the rural social work program at ECU in Bunbury where my focus was research methodologies and community development. I am currently doing doctoral studies researching individual, family, work/school and social network responses to domestic violence.

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Although there are some very innovative uses of spatial data within the emergency services, there are still major opportunities to take advantage of such information sources and associated technology to achieve greater safety of lives and protection of property and the environment.

In recognition of this situation, a Canberra-based project facilitation organisation, Technik Pty Ltd, in consultation with the Australian Capital Territory Emergency Services Bureau, developed a project proposal to AusIndustry. This resulted in approval of what is now known as the GeoInsight project.

GeoInsight is a major spatial information project supported by a grant of $2 million from AusIndustry under its Technology Diffusion Program. The project will take place over a 15-month period from August 2001 to October 2002. The mission of the GeoInsight project is to facilitate an enduring and mutually beneficial relationship between the Spatial Information Industry and the Emergency Management Community. The outcomes from this relationship will be:

- an enhanced understanding of each party's capabilities and needs
- on-going development and application of spatial information products, services and applications specifically for the Emergency Management Community.

These outcomes will be achieved in three phases:

- ***Phase 1.*** (Aug – Oct 01) Direct consultations with practitioners and managers of spatial information at appropriate tiers in the emergency management community.
- ***Phase 2A.*** (Nov 01-Apr 02) Development of demonstration and awareness resources including a range of program related on-line and CD-based skills development resources for spatial information users within the emergency management community.
- ***Phase 2B.*** (May – Oct 02) Delivery of demonstration and awareness workshops in each State and Territory. These will consist of presentations, demonstrations of example applications and spatial resources with hands-on opportunities for participants from various levels of the emergency management community and spatial information industry.

Technik Pty Ltd is managing the project with high level guidance and direction being provided by a Steering Committee comprising ACT Emergency Services Bureau, AGSO-Geoscience Australia, Australian National University, AURISA, AUSLIG, the Bureau of Meteorology, NSW SES and EMA. The independent chair of the Steering Committee is Alan Hodges, AM. This is an exciting project which has great potential to benefit the operations of emergency services.

The project team and Steering Committee members are committed to ensuring that the developments through this grant are driven by the needs of the emergency management community.

For further information see: www.geoinsight.net.au

Involving citizens in hazard mitigation planning: making the right choices

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Introduction

In addition to knowing what to do to mitigate losses from natural and technological hazards, local governments also must develop a commitment to take action. Commitment, however, often has been lukewarm, resulting in plans and proposals that no matter how technically proficient are either dead on delivery or produce minimal effort. By making the right choices about citizen involvement in mitigation planning, emergency managers can build an informed constituency for mitigation and real commitment among elected officials to take action.

Key choices include decisions about:

- objectives to be achieved by involving citizens
- points in the planning process when citizens participate
- which citizens to include
- techniques to be employed in securing citizen input
- information to be provided to citizens.

The problem

Substantial progress in reducing losses from natural and technological hazards will not occur until local public officials become informed about and committed to dealing with this policy problem. The importance of commitment in policy formulation and implementation has been widely noted by policy scholars. In the case of natural and technological hazards, however, researchers have found that local commitment to take action can be weak or missing entirely (Burby and May 1998; Rossi et al. 1982). In this article, I argue that by paying more attention to citizen involvement in hazard mitigation planning, emergency managers can build a political constituency, which will work to see that the recommendations for hazard mitigation made in plans are subsequently implemented. To be successful with this, managers need to make the right choices in their efforts to involve citizens.

Hazard mitigation requires local policy makers to develop and follow new ways of managing development and redevelopment processes, but public officials develop patterns of policy making over time that are difficult to change (Cobb and Elder 1972; Eulau and Prewitt 1973). The need to overcome inertia in local policy provides one justification for hazard mitigation mandates from higher-level governments (May et al. 1996). But, if the mandates do not substantially change rewards and penalties facing local policy makers, decision-making about mitigation is not likely to change. In fact, local policy makers often see few rewards from dealing with hazards because their individual constituents are not inclined to worry (or even think) about such low probability events or demand governmental attention to them (Kartez 1989; May 1991). Without positive signals from their constituents, politicians, who themselves do not see the problem as very serious, are unlikely to adopt policies to reduce risks from hazards. If the signals are all negative, they may actively resist national and state prescriptions to regulate activities in areas at risk (Ripley and Franklin 1982).

These obstacles can be overcome if there is an active constituency advocating for hazard mitigation. To create such a constituency, planners have to (1) ensure that stakeholders are aware of the costs they may incur in disasters and (2) develop consensus about ways of reducing or avoiding the most serious risks. Constituency building of this sort requires a collaborative, participatory planning process in which a key goal is social learning. That is, the various stakeholders in hazard mitigation (what political scientists term a 'policy network') need to be both informed of the potential costs of unsafe development in hazardous areas and convinced that alternative approaches to development are reasonable for all concerned interests. If some degree of consensus or policy convergence can be attained, then the political support needed to sustain local commitment to hazard mitigation may be secured.

Citizen involvement in hazard mitigation planning

A large (and growing) literature advocates citizen involvement in planning and, more generally, local public policy making, but various authors also have suggested there are a number of potential barriers that must be dealt with if citizen involvement efforts are to be effective in constituency building.

Widespread participation, for example, is viewed by some authors as administratively unworkable and as a potential cause of heightened conflict rather than consensus over appropriate courses of action (Day 1997). Others have noted various difficulties citizens have in participating effectively, ranging from apathy and lack of resources (skills, money, time) to inability to comprehend issues as complex as hazards (Almond and Verba 1965; Kartez 1989; Verba 1967). Other barriers include lack of governmental resources for, and time to engage in, citizen involvement processes and lack of government staff with knowledge about how to carry out an effective public involvement program (Catanese 1984). These factors create the potential for a large gap between what theorists and educators argue for as best practice and what actually occurs in local government planning and policy making. In fact, one recent study concluded, 'Standard participation efforts are often characterised by lengthy meetings, limited opportunities to comment, narrowly defined choices on which to comment, meeting fatigue or indifference on the part of those who run meetings, limited opportunities for dialogue, and an emphasis on informing or educating rather than problem solving' (Lowry et al 1997).

While citizen involvement can be difficult, if emergency managers make the right choices in involving citizens in the preparation of hazard mitigation plans, they can overcome many of the barriers that have contributed to limited success in the past.

The choices I think are most relevant

to the efficacy of citizen involvement include:

- objectives
- timing
- participants
- citizen involvement techniques
- information given to citizens.

In the remainder of this article, I examine these choices by noting first what theorists have to say about each of them and then looking at the choices made by emergency managers in the U.S. in preparing hazard mitigation plans. I also report the consequences of choices made in terms of the degree that actions recommended in plans were subsequently adopted.

Data

The data reported come from a nationwide survey of planners involved in preparing floodplain management plans to qualify for flood insurance rate reductions under the U.S. National Flood Insurance Program. Responses were obtained from planners working in seventy-four localities (67 percent of the U.S. total of 110 floodplain management plans that had been prepared as of 1999). Two types of analyses are reported. Descriptive statistics report the percentage of local governments that made particular choices in the planning process. Impact statistics indicate the consequences of choices made in terms of the percentage difference the choice made, in the actual implementation of hazard mitigation measures in the jurisdiction.[1]

Choice number one: objectives

Burke (1968) notes that citizen involvement efforts frequently fail to meet expectations because objectives are not formulated and participation is simply appended to on-going technical planning processes. As important as it is to have objectives, it also is important to choose the right ones. Potential objectives for citizen involvement include:

- complying with state government requirements regarding due process and citizen opportunities to voice their opinions about government proposals.
- educating and informing citizens about hazards and ways of dealing with particular hazards problems
- tapping citizen knowledge of and experience with hazards as a supplement to technical studies
- learning about citizen preferences for courses of action to deal with hazards
- mobilising an active constituency of citizens who would support programs and policies proposed in hazard mitigation plans
- fostering citizen influence in hazard mitigation decision-making through a collaborative planning process.

Although it is attractive to technically minded planners to limit efforts to involve citizens to the minimum required by state governments, clearly the first objective is not likely to help in building a constituency for mitigation. Most planners would agree that the second objective—providing citizens with information—is essential, if citizen involvement is to have any impact. Each of the remaining objectives is also likely to contribute to constituency building, although planning theorists recently have emphasised the sixth objective—collaboration—as absolutely essential.

Several authors (Arnstein 1969; Connor 1984; Glass 1979) view the choice of objectives in terms of a ladder of participation, on the assumption that the greater empowerment of citizens associated with a collaborative approach is normatively superior to the one-way communication (planner to citizen or citizen to planner) that characterises other citizen involvement objectives. Many planning scholars also now believe that the sixth objective—working collaboratively with citizens—is important for substantive reasons as well.

In their view, collaboration can:

- help citizens better understand information
- generate new ideas for dealing with problems
- lead to greater consensus on courses of action to deal with them
- produce greater long-term support for policy recommendations proposed in plans (see Barber 1981; Godschalk et al. 1994; Healy 1996; and Innes 1996).

Contrary to the arguments made by theorists, some U.S. hazard mitigation plans (20 percent) were prepared without consciously setting objectives for citizen involvement and others were guided by a very limited number of objectives. A typical jurisdiction (at the median of the sample) chose to emphasise only two goals for citizen involvement: educating citizens about hazards and complying with state requirements for citizen participation (see *Table 1*). As a result, plans prepared had less impact than they otherwise might have had.

When planners pursued three or more of the six objectives outlined in *Table 1*, their jurisdictions adopted 55 percent more mitigation measures than was the case in jurisdictions where no or only one objective was pursued. *Table 1* also shows that the theorists appear to be right about the choice of specific objectives. The greatest percentage increase in adoption of mitigation measures came from planning processes in which the planners emphasised 'fostering citizen influence in hazard mitigation' (76 percent increase in adoption of mitigation measures in comparison with jurisdictions that did not emphasise this objective), 'learning about citizen preferences' (70 percent increase in mitigation measures adopted), and 'mobilising an active constituency of citizens who would support programs and policies proposed in the plan' (42 percent increase).

Choice number 2: timing

Emergency managers have several options regarding timing in developing citizen involvement programs. One alternative is to ignore this question. However, if timing is not planned in advance, participation may be ad hoc, as when citizen involvement takes place not as a result of forethought but in response to citizen demands that their views be considered. This can result in an adversarial atmosphere that is not conducive to constituency building. If the timing of participation is planned, then planners have to decide when in the planning process to begin involving citizens.

The decision about timing is related to the objectives sought from citizen involvement. If the objectives are simply to comply with state requirements or to educate citizens, then citizen involvement could be limited to meetings and formal public hearings at the end of the planning process. However, if an objective is to tap citizen knowledge, public involvement

Notes

1. Respondents were asked whether any of eighteen different hazard mitigation measures were adopted after preparation of their floodplain management plan. These measures include: publication of maps of hazard areas; warning systems; public hazard awareness campaigns; mandatory inclusion of hazard boundaries on subdivision maps; requirements for special studies of hazards as a condition for development approval; site plan review to determine if hazard mitigation conditions should be required as a condition for development approval; regulations requiring low-density land use in hazard zones; reduction in allowable density in hazard zones; overlay of special hazard mitigation requirements for development in hazard zones; provision for clustered development in hazard zones to avoid the most hazardous portions of development sites; transfer of allowed density from hazard zones to hazard-free sites; density bonuses in return for dedicating hazard zone property to the public; mandatory dedication of hazard zone property to the public; impact fees on hazard zone development to cover public hazard mitigation costs; policy to locate public facilities outside of hazard zones; public acquisition of hazard zone property; relocation of structures from hazard zones; and levees, sea walls, flood control works, and other engineered structures to minimise hazards.

should take place early in the planning process. If the objective is to garner citizen feedback on planning proposals, it might be postponed to the point when planners are developing and evaluating action items and recommendations. If, however, the goal is collaboration with citizens and constituency building, then citizen involvement should begin early and be continuous throughout the planning process.

The choices about timing made by U.S. hazard mitigation planners are reported in *Table 2*. In the largest proportion of planning processes (44 percent) citizen involvement was limited to a planning committee (that is, there was no formal citizen involvement process) or to formal public hearings on the plan after it had been prepared. Just under a third (31 percent) saw citizens involved for the first time when choices were being made among action items and recommendations. Only a quarter of the planning processes involved citizens from the start.

For the most part, U.S. hazard mitigation planners matched the timing of citizen involvement to their objectives. For example, two thirds of those who emphasised compliance with state requirements or educating citizens involved citizens late in the planning process. In contrast, when planners tapped citizens for their knowledge about hazards, worked to foster citizen influence in decision-making, or to mobilise a supportive constituency, a majority involved citizens from the very first stages of the planning process. As shown in the right hand column of *Table 2*, early involvement of citizens paid large dividends in subsequent adoption of hazard mitigation measures. Local governments that involved citizens early adopted 85 percent more mitigation measures than those that initiated citizen involvement at a later stage.

Choice of objectives	Percent of jurisdictions emphasizing objective	Impact on adoption of mitigation measures[a]
Number of objectives pursued		
Low (0 or 1 objective emphasised)	44	(base case)
Medium (2 objectives emphasised)	28	+20%
High (3 or more objectives emphasised)	28	+55%
Specific objectives pursued		
Educating citizens about flood hazards	70	+25%
Complying with state requirements	38	+ 03%
Fostering citizen influence in hazard mitigation decision making	22	+76%*
Tapping citizen knowledge and experience	20	+12%
Mobilising an active constituency of citizens who would support programs and policies proposed in plan	20	+42%
Learning about citizen preferences and values	19	+70%*

N = 74 local governments that prepared hazard mitigation plans for credit under the National Flood Insurance Program Community Rating System Program.

* $p < .05$ in difference of means test between localities that emphasised each objective and those that did not emphasise the objective.

[a] Impact is the percentage increase or decrease in the number of hazard mitigation measures adopted after preparation of a hazard mitigation plan for jurisdictions emphasising each objective from the mean of the sample of jurisdictions not emphasising the objective. The group mean is 2.2 additional hazard mitigation measures adopted following preparation of a hazard mitigation plan.

Table 1: Choice 1 – objectives

Choice of stage	Percent of jurisdictions choosing stage	Impact on adoption of mitigation measures[a,*]
No formal public involvement program – planning committee only used for public input	9	(base case: 1.8 measures adopted)
Post-planning: formal public hearing on plan	35	-15%
Planning: development and evaluation of action items and recommendations	31	+19%
Pre-planning: scoping and development of work program	25	+85%

N = 74 local governments that prepared hazard mitigation plans for credit under the National Flood Insurance Program Community Rating System Program

* $p < .05$ in difference of means test among all stages.

[a] Impact is the percentage increase or decrease in the number of hazard mitigation measures adopted after preparation of a hazard mitigation plan for jurisdictions choosing to first involve citizens at each stage of the planning process from the mean of the sample of jurisdictions choosing to limit citizen involvement to a planning committee only. The group mean is 2.2 additional hazard mitigation measures adopted following preparation of a hazard mitigation plan.

Table 2: Choice 2 – stage of the planning process when citizens become involved

Choice number three: participants

Those who write about citizen involvement in planning generally argue that participation should be widespread and inclusive, so that consensus can be developed over appropriate courses of action through communication among all affected groups (e.g., see Godschalk et al 1994; Healy 1996; and Innes 1996). Those that have observed policy formation in the hazards field, in contrast, have observed that decision-making typically does not involve mass publics, but instead tends to be limited to government officials and the professional community (e.g., see May and Stark 1992). This latter perspective tends to be an accurate description of the choices made by hazard mitigation planners in the U.S. In over a quarter of the planning processes examined, citizens did not participate at all prior to public hearings at the end of the planning process (*see Table 3*). Instead, participation was limited primarily to local elected officials and representatives of various government departments. Beyond government personnel, a typical planning process (the median community) involved just two interest groups; but, contrary to arguments for widespread participation made by planning theorists, the more limited participation that characterises hazard mitigation planning in the U.S. has not adversely affected the adoption of hazard mitigation measures recommended in plans. Local governments that secured widespread participation in the preparation of hazard mitigation plans were only slightly more successful in seeing mitigation proposals acted upon than those where partici-

pation was limited to government officials and a few groups of stakeholders.

Several other aspects of the choice of participants have drawn considerable attention. Historically, citizen involvement processes have been viewed as ways to empower citizens whose views are often not considered in local government decision-making. Empowerment was a key consideration in early federal citizen participation requirements in the U.S., such as those embodied in the Economic Opportunity Act of 1964 and Model Cities program of 1966, and the degree to which it occurred dominated evaluations of those programs. This still could be an important consideration, since citizen involvement may be meaningless if 'collaborative processes merely end up being conversations among elites, new forms of an old corporatism...as opposed to real attempts to involve multiple stakeholders' (Healy 1996). Nevertheless, as shown in *Table 3*, groups representing disadvantaged citizens actively participated in only 10 percent of the hazard mitigation planning processes examined, and groups advocating for affordable housing took part in only 1 percent. As with mass participation, however, the exclusion of disadvantaged groups did not limit subsequent adoption of mitigation measures proposed in plans. Of course, whether the plans were equitable in the distribution of costs and benefits of mitigation is an open question.

Godschalk et al (1998) note that it is important to involve officials who are likely to be making decisions about hazard mitigation and people who are likely to be affected by mitigation choices (primary stakeholders). The choices planners made in this regard are also shown in *Table 3*. Most planning processes brought in local elected and staff officials, which tended to enhance the subsequent adoption of mitigation measures. Many also involved interested state and federal agencies, but whether or not those agencies were involved had little effect on subsequent action on proposals made in plans.

Less than a majority of the planning processes involved any of the other stakeholder groups I asked about. Groups planners were most likely to involve included representatives of the media, neighbourhood groups, and development and business interests. May and Stark (1991) note, in addition, that in the case of hazard mitigation policies, participation by interested professional groups, such as associations of civil engineers and architects, may be critically important. At the national level, for example, these groups have been found to be particularly important in disseminating and fostering the use of information about natural hazards. At the local level, few planning processes (less than a quarter) obtained participation by groups representing relevant professions. Participation was also infrequent by groups representing environmental interests, resource industries such as agriculture and forestry, and sports, outdoor, and recreation interests. The impact data in *Table 3* suggest that the failure to include some of these latter groups could be costly. The likelihood that mitigation measures proposed in plans would be adopted was substantially enhanced when professional, environmental, resource industry, and sports, outdoor, and recreation groups took part in the planning process.

Choice of participants	Percent of jurisdictions with participation by group	Impact on adoption of mitigation measures[a]
Low (0 citizen groups involved)	28	(base case)
Medium (1-3 citizen groups involved)	45	-3%
High (4 or more citizen groups involved)	27	+4%
1. Disadvantaged groups		
Groups representing disadvantaged people exposed to flooding	10	-.17%
Groups advocating for affordable housing	1	-10%
2. Public officials		
Local staff personnel	88	+36%
Local elected officials	74	+36%
Regional water resource officials	38	-18%
State flood insurance program coordinator	49	+03%
State emergency management agency official	39	+05%
State water resources agency official	28	-07%
Federal Emergency Management Agency personnel	41	+09%
U.S. Army Corps of Engineers personnel	31	-06%
U.S. Geological Survey personnel	11	+08%
3. Stakeholder and other groups		
Media	44	-21%
Neighbourhood groups	42	+08%
Development groups (homebuilders, etc.)	35	-15%
Property owner groups	35	-04%
Business groups (Chamber of Commerce, etc.)	32	+14%
Professional groups (engineers, architects)	23	+37%
Environmental groups	13	+29%
Port, fishing, and marine industry groups	6	+01%
Agriculture and forest industry groups	4	+21%
Sports, outdoor, and recreation groups	1	+129%

N = 74 local governments that prepared hazard mitigation plans for credit under the National Flood Insurance Program Community Rating System Program

* $p < .05$ in difference of means test – localities in which group participated vs. those where group did not participate. (Note: none significant in this table.)

[a] Impact is the percentage increase or decrease in the number of hazard mitigation measures adopted after preparation of a hazard mitigation plan for jurisdictions in which group participated versus jurisdictions in which group did not participate. The overall group mean is 2.2 additional hazard mitigation measures adopted following preparation of a hazard mitigation plan.

Table 3: choice 3 – whom and how many to involve

Choice number four: techniques

A number of techniques have been developed to foster citizen involvement in planning. There seems to be general agreement that public hearings have a variety of flaws as a participation technique (Benest and Erlewine 1993; So et al 1986), but there is little information

available about the importance of choices emergency managers make among other techniques. Most of the literature on the subject is either merely descriptive of techniques or advocacy pieces based on limited experience.

Table 4 provides a list of eight techniques for securing citizen input. Public hearings, used by over 80 percent of the planning processes examined, are the most widely used approach, and a majority of planning processes also employed open meetings and facilitated meetings. Less frequently employed techniques include citizen advisory committees, subcommittees and workgroups, interviews with key stakeholders, household surveys, and telephone hotlines. The impact analysis indicates that with the exception of telephone hotlines, most of these techniques lead to improved prospects that measures proposed by plans will be subsequently adopted and used. In addition, prospects for adoption improved when planners used a wider variety of citizen involvement approaches. This may stem from the fact that each approach is likely to result in participation by a somewhat different group of citizens and will produce somewhat different information and outcomes. Key stakeholders, for example, may not attend public meetings, but their views can be tapped through personal interviews. Advisory committees and workgroups provide opportunities for intensive interaction between citizens and planners and make it possible to discover consensual courses of action. Household surveys help guarantee that input is received from a representative cross-section of citizens. Open and facilitated meetings and public hearings provide opportunities for citizens who have a strong interest in mitigation to make their views known. When more citizen involvement techniques are employed, planners increase the likelihood that different groups' views are considered and reduce the likelihood that controversy and community conflict will develop over proposals made in mitigation plans.

Choice of techniques	Percent of jurisdictions using technique	Impact on adoption of mitigation measures[a]
Number of techniques used:		
Low (0-2 techniques)	33	(base case)
Medium (3-4 techniqeus)	35	+29%
High (5-7 techniques)	32	+76%*
Specific techniques used:		
Public hearings	82	+44%
Facilitated workshops/meetings	65	+33%
Open meetings	61	+05%
Citizen advisory committee	47	+75%*
Subcommittee or workgroups	32	+19%
Interviews with key stakeholders	28	+30%
Household surveys	26	+53%
Telephone hotline	19	-18%

N = 74 local governments that prepared hazard mitigation plans for credit under the National Flood Insurance Program Community Rating System Program

* $p < .05$ in difference of means test – localities where technique was used vs. those where technique was not used.

[a] Impact is the percentage increase or decrease in the number of hazard mitigation measures adopted after preparation of a hazard mitigation plan for jurisdictions in which group participated versus jurisdictions in which group did not participate. The overall group mean is 2.2 additional hazard mitigation measures adopted following preparation of a hazard mitigation plan.

Table 4: choice 4 – techniques for involving citizens

Choice number five: technical information

For participants to make or influence decisions competently, they must have access to adequate information about hazards, vulnerability, and hazard mitigation options. Information is empowering, and, hence, access to it is often a political dimension of planning processes. Adequate technical information is an especially vexing and perverse problem in hazard mitigation. Many local governments have little information about vulnerability (Burby et al 1991), and lay people as well as professional constituencies often ignore such information when it is available, unless hazards are tied to other salient issues. As a result, Faupel and Kartez (1996) argue that public education about hazards (including that developed for constituencies such as developers, designers, and key agencies) should always be emphasised in emergency management. I believe that empowering citizens with information is also an essential element of hazard mitigation planning. The two key choices here are ones of information content (does the locality provide important information about vulnerability to hazards?) and of access (are participants being given it actively and in a form they can use?).

Among the seventy-four hazard mitigation planning processes examined for this study, more than 90 percent provided citizens at least one type of information. The jurisdiction at the median of the sample provided three. Types of information disseminated by a majority of these planning processes included maps delineating hazard areas, summaries of plan elements or issue areas, and goal or vision statements (see *Table 5*). The more types of information planners provided during the planning process, the more likely recommendations proposed in plans were to be subsequently acted upon. Types of information that had particularly strong associations with the adoption of hazard mitigation measures include the provision of projections of future development expected in hazard areas, goal or vision statements, and information on alternative designs and strategies being considered. With each, the proportion of mitigation measures adopted increased by over 50 percent in comparison with planning processes that did not provide that information.

Different groups tend to attend to different channels of information. Thus, to adequately reach citizens, it is important for planning processes to disseminate information in a variety of different ways. This is well illustrated by the data in the bottom section of *Table 5*. The number of hazard mitigation measures adopted after plans were prepared more than doubled when planners used three or more channels to disseminate information to the public. The channels used by a majority of planning processes—educational workshops, talks to community groups, brochures, and newsletters—is each associated with marked improvement in the chances that measured proposed in plans would be adopted and used.

Conclusion

Citizen involvement can be critical to the success of hazard mitigation plans and

Choice of information channel/type of information	Percent of jurisdictions	Impact on adoption of mitigation measures[a]
Number of types of information provided		
Low (0-1 types of information)	32	(base case)
Medium (2-4 types of information)	33	+29%
High (5-7 types of information)	35	+76%*
Specific information provided:		
Maps showing flood-hazard areas	82	+43%
Summaries of plan elements or plan issue areas	60	16%
Goal or vision statements	54	+64%*
Alternative design or strategy statement	32	+56%*
Vulnerability assessments	31	+28%
Summaries of survey or meeting results	21	+33%
Projections of development in hazard areas	18	+86%*
Number of channels used:		
Low (0-2 techniques)	32	(base case)
Medium (3-4 techniqeus)	33	+111%*
High (5-9 techniques)	35	+116%*
Specific channels used:		
Educational/informational workshop	56	+94%*
Talks to community groups	54	+35%
Brochure	54	+51%
Newsletter	54	+50%
Newspaper inserts	47	+21%
Bill stuffers (in utility bills, etc.)	39	-26%
Public access cable television	24	+13%
Website	21	+08%
Videos	11	+49%

N = 74 local governments that prepared hazard mitigation plans for credit under the National Flood Insurance Program Community Rating System Program

* $p < .05$ in difference of means test-localities that provided type of information vs. those that did not.

[a] Impact is the percentage increase or decrease in the number of hazard mitigation measures adopted after preparation of a hazard mitigation plan for jurisdictions emphasizing each objective from the mean of the sample of jurisdictions not emphasizing the objective. The group mean is 2.2 additional hazard mitigation measures adopted following preparation of a hazard mitigation plan.

Table 5: choice 5 – channels used to disseminate information to participants and types of information provided

programs, since it is the key to creating a strong local political constituency for mitigation. Emergency managers, however, face a number of choices in deciding how to involve citizens in the planning process. In this article, I have reviewed evidence from floodplain planning processes in the U.S. to provide some guidance about how to proceed. First, establish clear objectives about what is to be achieved through citizen involvement. Programs are more effective in developing supportive constituencies when they consciously seek to collaborate and empower citizens and when they pursue a broader range of objectives for citizen involvement. Second, time participation so that it reinforces the chosen objectives. Where constituency building is an objective, plans are more effective when citizens are involved from the beginning stages of the planning process. Third, involve stakeholders, government officials, and professional experts, and do not ignore groups, such as environmental, resource industry, and outdoor recreation interests, who will advocate for open space uses of particularly hazardous areas. Fourth, carefully consider participation techniques and choose those that best fit the objectives sought through participation and the resources available. At a minimum, do not limit involvement to a public hearing, which provides little opportunity to develop a dialogue with citizens. Finally, develop adequate information about vulnerability to hazards and hazard mitigation goals and policy options and then ensure that it is accessible to citizens by using a variety of channels for dissemination.

The choices planners face in developing citizen involvement programs are complex. In this article, I have shown that careful attention to making the right decisions in involving citizens can result in more effective plans — plans that are not dead on delivery and actually produce measurable results. In short, when local governments devote the time and resources needed to plan with citizens, they realise far more effective plans than when planning is conducted solely as a technical exercise involving only experts.

Acknowledgments

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This article has been refereed

Conference Announcement

Third International Conference on Computer Simulation in Risk Analysis and Hazard Mitigation. RISK 2002

June 19-21, 2002. Sintra, Portugal, Organised by Wessex Institute of Technology.

The analysis and management of risk and the mitigation of hazards is essential. The advances in computational methods and the ability to model systems more precisely now enable hazards to be quantified, their effects to be simulated and risk analysis to be pursued with greater accuracy, providing far more effective risk management. These developments are not only important for all areas of human endeavour, but have particular relevance to environmental issues where the risks involved are increasingly seen as substantial. Effective risk management and the mitigation of possible hazards have become a high priority of government concern.

Topics to be covered

Hazard prevention, management & control, Estimation of risks, Emergency response, Data collection & analysis, Hazardous materials in transit, Water resources modelling & management, Landslides, Earthquakes, Soil & water contamination, Air quality studies, Damage remediation, Risk associated with Brownfield Developments, Waste disposal risk, Floods & droughts, Coastal & sea pollution, including oil spills, and Case studies

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Measuring community awareness and preparedness for emergencies

by Jessica Enders,
Colmar Brunton Social Research

Introduction

A key corporate objective of the Victorian Government is that 'Victorian communities are safe and people feel justifiably confident about their safety'. This is an objective shared by the various public and private agencies which, whether within or outside the Justice Portfolio, are part of Victoria's emergency management arrangements.

Within the context of emergencies, the safety of the community is somewhat determined by the effectiveness of emergency management and services, which are primarily supplied or controlled by the public sector. However, another important component of safety is that individuals, organisations, industries etc. are aware of the risks they are exposed to and have taken actions to mitigate and/or prepare for such emergencies.

Historically, communities were seen as *passive entities whose involvement in* emergency management was only as receivers of assistance when emergencies occurred. Government and its agencies were seen as the sole entity responsible for managing such emergencies. It has been increasingly recognised that this historical model of Government emergency management is no longer appropriate (Neilsen & Lidstone 1998; Hodges 1999; Reinholtd 1999; Rhodes & Reinholtd 1999). Emergency management agencies do not have the resources to comprehensively deal with all emergencies protecting every home and every life. Moreover, the impact of emergencies can be significantly reduced with the involvement of the community in planning, mitigation and preparation. Emergency management agencies can develop, in consultation with the community, the most appropriate and effective ways to manage emergency risks.

The second part of the Victorian Justice Portfolio objective refers to feelings of confidence in the community about its safety. In an emergency management context, this translates into community members feeling that they have (or have access to) the information, resources and support that they desire and/or need to ensure their safety, despite the risks with which they live.

Currently some information is available on the effectiveness of services provided by the emergency management sector, such as incident and response time data. There is comparatively little information on awareness and preparedness of the community for emergencies[1] and it is recognised that such data is needed. Research questions include:

- how aware is the community of emergency risks?
- what steps have members of the community taken to maximise their safety?
- and how confident do they feel about emergency issues?

Collecting data to answer such research questions will lead to a greater understanding of the context within which emergency management occurs. In the long term, there is also the possibility that measurement will lead to the ability to *predict* how people will respond to emergencies.

Focus on outcomes

There is no denying that the process of measuring emergency awareness and preparedness of the community will be complex. It may be clear that some sort of survey is needed, but what should go in such a survey and to whom should it be administered? To answer these questions the model shown in *Figure 1* is useful. This model, utilised by the Australian Bureau of Statistics for their surveys, outlines the steps to be taken when a research issue is identified and a process for addressing that issue is required. Following the model from right to left describes the process of going from a desire to obtain information about an topic, to determining what sort of processes are needed to produce that information. Working through the model from left to right describes the process of data collection and utilisation of the resulting data.

Therefore, the key steps in developing a data collection process are to:

1. Define both the broad and detailed outcomes that are desired;
2. Determine what outputs (ie data) would describe the extent to which outcomes are being met; and
3. Construct processes to collect the data defined in Step 2.

For this topic, defining desired outcomes as per Step 1 will include determining:

- what is meant by 'community' eg individuals versus organisations
- what is included in the definition of an 'emergency'
- what type of emergencies over what geographic area are in-scope
- what is it that emergency managers want the community to be 'aware' of, and how 'prepared' does the community need to be.

Behaviour change

Essentially, the task of increasing community preparedness for emergencies is one of effecting behaviour change. Hence there is a need to consider frameworks for how individuals move through the behaviour change process. That is, how do people:

- receive information about emergency risks
- perceive those risks
- behave in relation to the risks.

Previously it was believed that once an individual had the information they needed, they would act appropriately. It is now recognised that there are several steps between an individual receiving information and them changing their behaviour (Boura 1998; Nielsen & Lidstone 1998; *Johnston et al* 1999; *Rhodes & Reinholtd* 1999). Moreover, different individuals will have different levels of resistance to change, regardless of the change mechanisms applied (Hill et al 1996).

Assuming an individual has been exposed to some sort of emergency related information, they can then be viewed as a 'consumer' of that information, 'exercising a right to choose' to use it or

Notes

1. Some excellent work has been done by the Victorian Country Fire Authority

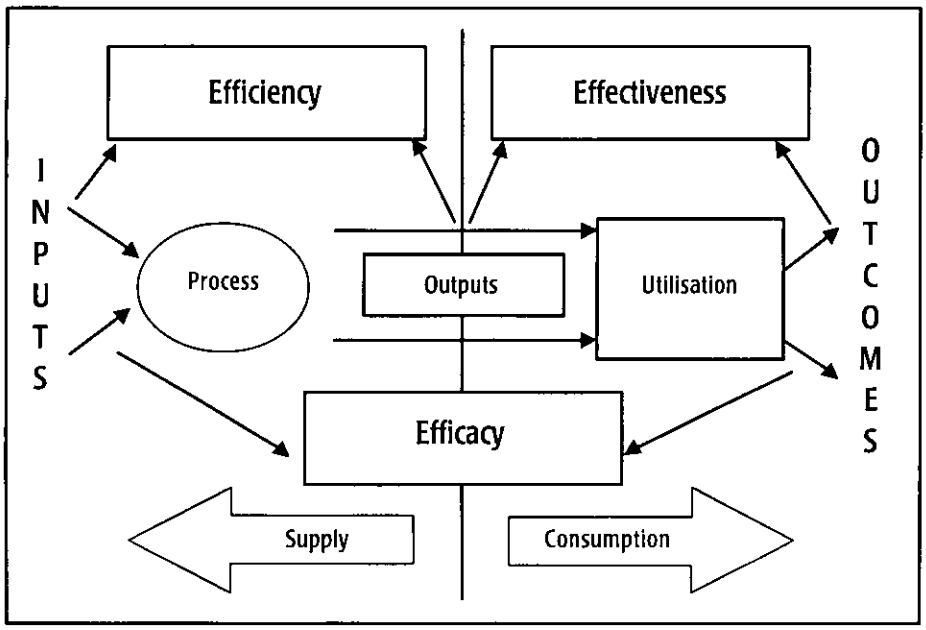

Figure 1: steps to be taken when a research issue is identified and a process for addressing that issue is required.

not (Twigg 1998). Factors that may influence the decision are given by Mulilis (1998):

- 'source of the communication — credibility, trustworthiness, attractiveness, liking, similarity, power
- message characteristics — style, clarity, forcefulness, speed, ordering, amount of material, repetition, number of arguments, extremity of position
- channel variables — media type (such as television, radio, newspapers, face-to-face communication), verbal versus non-verbal communication, context of the channel
- receiver variables — age, intelligence, gender, self-esteem, level of active participation, incentives for participation
- target or destination variables — attitudes versus behaviour, decay of induced change, delayed-action effects, resistance to persuasion'.

Eiser et al (1994) also note that attitudes are self-sustaining in that not only do they 'adapt themselves to new information, but influence the kind of information that is sought and remembered, and the manner in which it is understood'. This makes understanding how individuals 'become' aware even more complex.

Rohrmann (1998) proposes the model shown in *Figure 2* that indicates a number of forces working on the individual in the risk communication process. The model acknowledges that 'risk-reducing behaviour regarding a hazard is determined not just by the communicated messages of the information/education program but the result of a complex [personal] evaluation process including prior attitudes, and influenced by personal characteristics and manifold context factors' (Rohrmann 1998). This reinforces a very important point: the actual communication of scientifically quantified risk is only one aspect of the awareness and behaviour change process. Economic and societal factors, as well as personal experiences, can also significantly impact on individual attitudes and whether 'ideal' behaviours are adopted.

An alternative adopted by some researchers is to focus on examining the *factors* associated with preparedness. For example, Johnston et al (1999) discuss previous literature which relates preparedness to factors such as:

- perceived risk
- amount of relevant information
- level of past damage from a similar emergency
- salience of hazard
- level of knowledge about the threat.

Factors found by Russell et al (1995) include:

- socio-economic and demographic variables (such as income, presence of school-aged children in the household, home ownership)
- personality traits (such as anxiety)
- hazard related variables (such as previous experience with the hazard, perceptions about personal vulnerability).

Russell et al (1995) also discuss how some of these variables can be interpreted as measures of 'community involvement' or alternatively of 'willingness to accept responsibility'.

Given all these factors, what can we deduce about a model for behaviour change? Rhodes and Reinholtd (1999) propose the framework in *Figure 3*.

In this model, the way people choose to respond to an identified hazard is 'dependent upon their knowledge, expectations, perceptions [of the hazard]... along with a range of other influences' (Rhodes & Reinholtd 1999). The authors also note that 'importantly, each stage [of the model] does not represent a level of preparedness in itself. Rather, the level of preparedness is reflected by the position people occupy within each of the stages at any one point in time' (Rhodes & Reinholtd 1999).

Rohrmann (1996) also discusses a related model for persuasion and attitude change which has been 'identified by social psychologists such as Eagly & Chaiken (1993) and McGuire (1985)'.

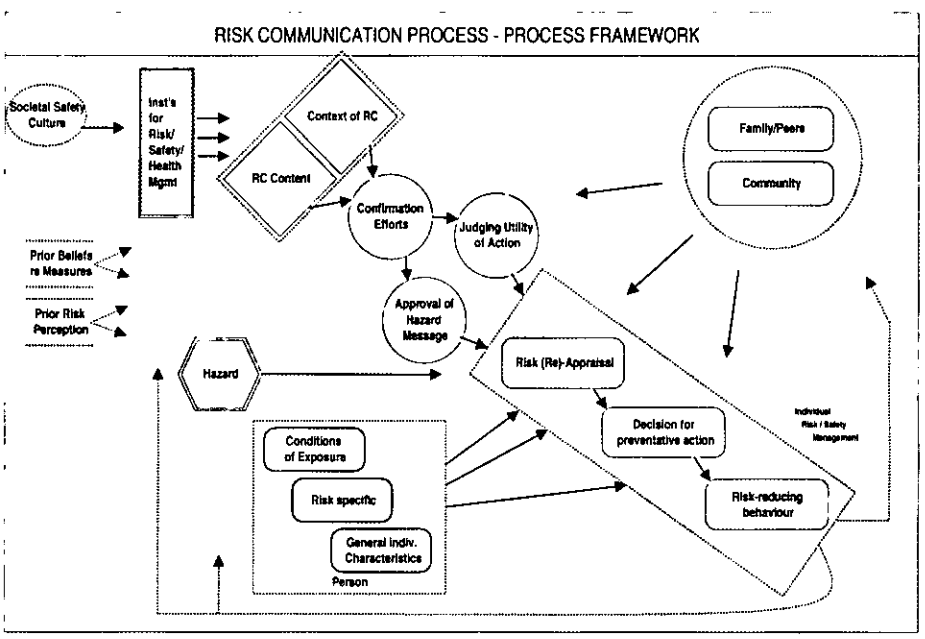

Figure 2: Rohrmann's Risk Communication Framework

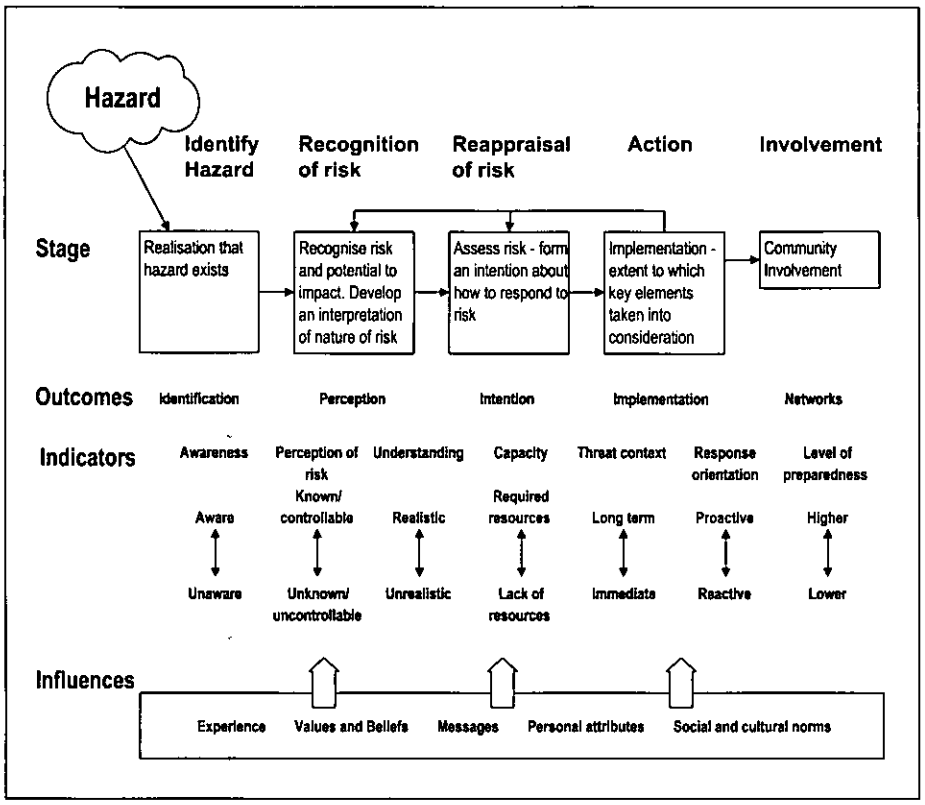

Figure 3: Preparedness model from Rhodes & Reinholtd

This model stipulates:

- ***attention*** (having exposure to information), *precedes*
- ***comprehension*** (understanding the meaning of the information), *which precedes*
- ***interpretation*** (relating the information to one's own context), *which precedes*
- ***confirmation*** (reconsidering the relevance of the information to one's own situation), *which precedes*
- ***acceptance*** (deciding that the information does apply), *which precedes*
- ***retention*** (becoming part of one's own thoughts and belief system), *which finally precedes*
- ***behaviour change.***

These models illustrate that awareness and preparedness are only part of a continuum from information attainment to behaviour change. It can be tempting to only measure those parts of the process that are of interest, or are easily accessible. However, there is a danger associated with only measuring part of a process, as recognised by Waldersee (1999), who notes a tendency for things to 'become measures because they are available, not because they are key indicators'. Waldersee (1999) also observes that some measurement can be more dangerous than no measurement, because it can give a distorted view of the situation. This in turn can lead to misallocation of resources. Hence, agencies should strive to measure *all* the variables involved in the behaviour change process, and avoid ignoring potential factors because they are difficult to measure.

The models also demonstrate that an individual's accumulation of knowledge about an emergency risk and actioning of appropriate behaviours is a complex process that is influenced by factors beyond education about emergencies. Johnston et al (1999) note that the 'assumption that threat and risk perceptions can be measured in absolute terms and in isolation from other societal pressures' limits our conclusions. This suggests that measures of awareness and preparedness examined over time should not be used as the sole proxy for measuring success or failure of public education campaigns.

A holistic framework for looking at awareness and preparedness of individuals

Figure 4 (below) gives a proposed framework for looking at awareness and preparedness of individuals. This framework is consistent with the models for behaviour change discussed above. The aim of the framework is to clarify the range of factors that need to be considered in order to appropriately conceptualise the issues relating to awareness and preparedness. Specific *relationships* between variables or factors in this model are not proscribed.

This framework can be directly used to design the data collection process. The intention of the framework is to contain the complete set of factors that may influence the outcome of interest, which is an individual's emergency risk behaviour and intentions. The factors are the individual's:

- hazard knowledge
- attitudes to risk
- previous experience of emergencies
- exposure to awareness raising
- ability to mitigate/prepare/respond
- demographic characteristics.

The aim is for *all* factors that may have an impact on outcomes to be measured. This will enable analysis to go beyond correlating exposure to public education campaigns with behaviours (real and intended) to correlating *all* change items with behaviours. This is a more holistic (and therefore appropriate) analysis of the emergency awareness and preparedness issue.

Factors

The factors in this framework will be briefly discussed.

'Hazard knowledge' refers to awareness, effectively in terms of a sliding scale ranging from not being cognisant that a hazard exists to fully 'understanding' the

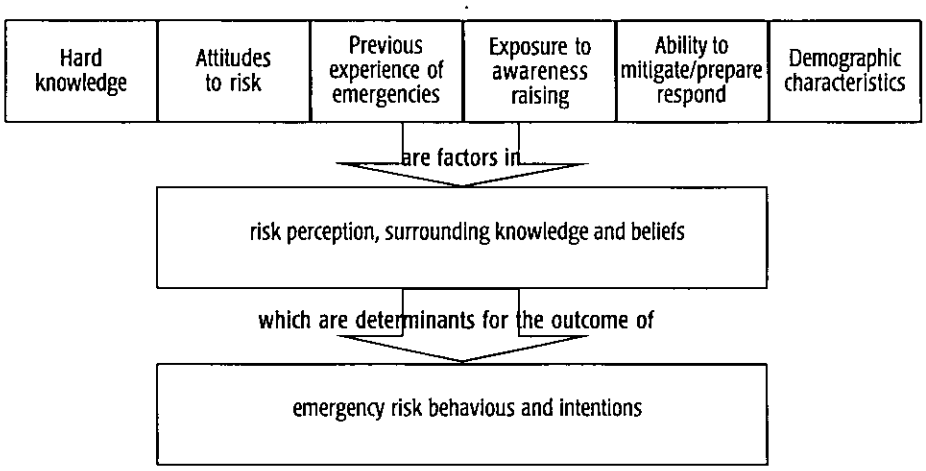

Figure 4: *A framework for investigating emergency awareness and preparedness*

hazard. Note that the framework allows for the possibility of a two-way relationship between 'hazard knowledge' and 'attitudes to risk', namely that hazard knowledge can affect attitudes to risk, and risk attitudes can impact on the level of hazard knowledge.

'Attitudes to risk' incorporates individual risk perceptions, awareness of the scientific assessment of risk and perceptions of that scientific assessment.

'Previous experience of emergencies' covers a range of concepts such as the impact on the individual from the experience of an emergency and how removed the individual was from the emergency itself. This latter factor is included because it has been recognised that it is not easy to define 'experience' of an emergency and the links between the emergency and the individual do not even have to be strictly direct. For example, Bennett (1999) discusses a case in Port Talbot, UK, where community groups became concerned about emergency risks in their local chemical plant only after a similar plant elsewhere in the British Isles experienced an emergency.

The concept of 'exposure to awareness raising' encapsulates factors involved in whether the individual personally, or someone they know, has been exposed to awareness raising efforts about emergencies. This concept looks at issues such as whether the individual has attended a public education program, whether the program was relevant and timely, whether the individual has obtained information from other sources, etc. The purpose of including this factor is to provide an overview of an individual's experience with awareness raising.

'Ability to mitigate/prepare/respond' covers perceived as well as actual ability to behave appropriately in a given emergency risk situation. This concept includes factors such as access to resources, feelings of responsibility and vulnerability and connectedness with the community. That is, it is recognised that social support is an important factor in an individual's ability to behave appropriately (Hill et al 1996).

Finally 'demographic characteristics' includes socio-economic and other descriptive factors about the individual and their situation. These are factors such as age, sex, location, employment status and mobility.

Outcomes

The outcome being influenced by the above factors is 'emergency risk behaviour and intentions'. This outcome incorporates concepts such as actual mitigatory/preparatory steps taken by the individual, reasons for taking such steps, whether the individual feels they have prepared enough and what an individual would do in a range of emergency situations.

It should be noted that the individual's perceived preparedness is included, as it can be different from preparedness from an 'expert' point of view. This is evidenced by Russell et al's 1995 study. This study is a case for measuring *both* concepts, as perceived preparedness is likely to be a factor in why people do or do not adopt certain behaviours.

Statistical issues

Research questions for a data collection

The framework above can be directly translated into a set of research questions that can in turn be transformed into a data collection tool. *Table 1* (overleaf) gives a set of possible data items for such a tool given this framework and assuming a target population of individuals in households. The list is generic in the sense that it doesn't refer to particular types of emergencies. Moreover, the items are not presented in any particular order.

Type of data collection

There are two main approaches to data collection: quantitative and qualitative. Quantitative data is numerical or categorical, whereas qualitative data is less measurable and tells us more about *what* we are measuring than just how much it occurs.

Quantitative approaches allow data users to make inferences about the frequency of certain events or items in the wider population. In the context of awareness and preparedness, for example, it is important to know how many people are adopting different attitudes or behaviours. The shortcoming of quantitative data is that it provides limited information on *why* people feel or behave the way they do, or the particular *circumstances* influencing people. This is where qualitative data can be useful: it can provide an expansion — or caveats — to quantitative results. As Rohrmann (1998) notes, 'quantitative and qualitative approaches provide different kinds of evidence, and thus are complementary'.

The typical way to gather quantitative data is via surveys. Qualitative data can be collected through mechanisms such as focus groups and in-depth interviews with individuals. The advantages and disadvantages of each of these data collection methodologies are the advantages and disadvantages of quantitative and qualitative data themselves. For example, surveys — whether sample surveys or censuses — allow inferences to be made for the whole population, provided they are conducted properly. Focus groups, on the other hand, do not, as they are not standardised assessments of a random population selected with a certain, measurable probability. However, surveys can be resource intensive to conduct, whereas focus groups are can be less resource intensive.

Comparability and benchmarking

If the data collected is going to form a baseline indicator to be tracked over time, then the data collection methodology needs to be relatively comparable from one period to the next. Amongst other things, this often means keeping survey questions the same. Alternatively, the collection may comprise a set of core fixed questions complemented by modules of questions that may differ over time. If such an approach is adopted, there is a need to test any questionnaires each time for context effects. Context effects refer to the phenomena where responses to questions are affected by the responses to previous questions.

Awareness and preparedness levels as measured in a survey cannot be analysed in isolation. For them to have any meaning (particularly as they will probably be presented in some sort of numerical fashion), it is crucial that they are benchmarked against 'minimum' or 'ideal' levels of awareness and preparedness. Benchmarking against scientifically predicted risk might also be informative.

Benchmarks would ideally be identified by emergency management agencies *before* embarking on the collection of data. This is about relating statistics to the objectives of the measurement process and emergency management in general. Note that data about current levels of awareness and preparedness (ie a baseline indicator) could be used in the process of developing benchmarks for future awareness and preparedness levels.

Questionnaire design

For any survey careful consideration needs to be given to the design of the questionnaire used. This is particularly the case for the topic of emergency awareness and preparedness.

One questionnaire design issue that may be a particular factor in the success or otherwise of the data collection process is terminology. The terminology used can significantly influence the type and quality of response obtained. In this

Factor	Data items
Hazard knowledge	• knowledge of the pre-emptive conditions necessary for a given emergency to occur • knowledge of the early warning signs of a given emergency • knowledge of the behaviour of a given emergency • knowledge of personal activities that can increase likelihood of a given emergency occurring • knowledge of the appropriate steps for responding to a given emergency (need to be careful with how this interacts with measuring behaviours and intentions) • whether personally involved in emergency management in the field of the hazard of interest • whether personally involved in emergency management in another field to the hazard of interest • whether a family member involved in emergency management in the field of the hazard of interest • whether a family member involved in emergency management in another field to the hazard of interest
Attitudes to risk	• perceived likelihood of emergency occurring in a given time frame • perceived likelihood of emergency of interest compared with other risks • perceived consequences to personal health of emergency occurring • perceived consequences to personal resources of emergency occurring • perceived consequences to family of emergency occurring • perceived consequences to community of emergency occurring • perceived consequences to economy of emergency occurring • perceived consequences of emergency of interest compared with other risks • perceived time frame of next emergency of a given magnitude occurring • awareness of the statistical assessment of risk for a given hazard (is also 'exposure to awareness raising') • belief in statistical assessment of risk • whether consider assessors of statistical risk knowledgable • whether consider assessors of statistical risk trustworthy
Previous experience of emergencies	• type of last emergency experience • timing of last emergency experience • degree of personal (ie to that individual) physical impact • degree of personal (ie to that individual) psychological impact • degree of personal (ie to that individual) resource impact • whether impacted on someone they knew • whether impacted on known persons geographically close • whether impacted on unknown persons geographically close • whether impacted on unknown persons geographically distant but in a similar situation • actions taken during last emergency experience (may include: did they request assistance from an emergency response service) • perceived degree of involvement of emergency services in last emergency experience • experience of a warning which was not followed by predicted emergency • total number of emergency experiences
Exposure to awareness raising	• length of time living in the area in absolute terms (eg period in months) • length of time living in the area in relation to last disaster (there/not there) • whether previous place of residence was prone to the emergency risk of interest • time frame since personally attending an education program on emergency risk of interest (eg never, a long time ago or recently) • time frame since personally attending an education program on other emergency risks (eg never, a long time ago or recently) • time frame since a family member attended an education program on emergency risk of interest (eg never, long time ago or recently) and whether the family member was a child or adult • time frame since a family member attended an education program on other emergency risks (eg never, long time ago or recently) and whether the family member was a child or adult • whether any of these programs motivated them to intend to undertake an actual behaviour • whether any of these programs motivated them to actually undertake a behaviour • whether have sought out any information on emergency risks within a given time period • whether can recall recently hearing/seeing a message about emergency risk of interest • source of message about emergency risk of interest • content of message about emergency risk of interest • whether this information motivated them to intend to actually undertake a behaviour • whether this information motivated them to undertake an actual behaviour
Ability to mitigate/ prepare/ respond	• access to financial resources • access to information and organisations who can help (knowledge of appropriate organisation and how to find out contact details) • access to family and friends (eg nearby, easy to get in touch with) • feelings of personal responsibility for preparing for an emergency • feelings of personal responsibility for preventing emergencies • feelings of control over things that happen to them • feelings of self reliance • feelings of vulnerability • connectedness to community
Demographic characteristics	• age • sex • family type, including marital status • education • employment status and occupation • geographic location (must be measured in a way that can be translated into location in relation to mapped risk) • dwelling type • language background, eg Non-English Speaking Background or not • tenure type (also 'ability to mitigate/prepare/respond') • income (also 'ability to mitigate/prepare/respond') • mobility (also 'ability to mitigate/prepare/respond')

Table 1a: Factors in risk perception, surrounding knowledge and beliefs. Possible data item list.

Data items
• whether have taken the listed steps to mitigate/prepare for a given emergency risk
• (where appropriate) for each step taken, when it was taken
• for each step taken, whether it was taken for emergency management reasons
• for each step taken for emergency management reasons, what was the motivator for taking the step
• for steps not taken, what the likelihood is of those steps being taken in a given time period
• whether developed a plan for response to emergency
• if a plan for response developed, what the plan is
• if a plan for response developed, how long have they had it
• if a plan for response developed, when last practiced
• if a plan for response developed, what motivated them to develop
• if a plan for response not developed, the likelihood of developing a plan in a given time frame
• 'what would you do if' scenarios of various emergencies
• whether feel the preparations they have taken are sufficient
• if don't feel preparations are sufficient, what more would they like to do

Table 1b: Emergency risk behaviour and intentions (outcome). Possible data item list.

instance, it is worth noting:

- the words used to define a concept do not necessarily have to be the ones used in the data collection process; for example, one could use 'actions to reduce the impact of a disaster' instead of 'mitigation'
- one does not necessarily have to avoid replacing jargon or technical terms with longer descriptive-type references — questionnaire research has shown that the time spent thinking about and answering a question is correlated with question length and that 'longer questions typically provide more cues to stimulate the memory search and more time for the respondent to search their memories.' (Bradburn and Sudman 1991)
- generic terms should be replaced with specifics where possible; for example, rather than talking about 'emergencies' or 'disasters', the data collection process could refer to fires, floods and storms, or whatever particular emergencies are considered in-scope
- one should not assume terms that are familiar to the researcher are understood by the wider public, as one's own understanding is coloured by personal experience, hence testing of the questionnaire will be invaluable.

Another particularly relevant issue for measuring awareness and preparedness is the problems that can occur with self-reports and self-assessments. One technique that has been used in the past to measure awareness and preparedness in this context is asking the respondent to identify whether they have the information they need or have taken the appropriate steps, ie a self report or assessment. An example of such a question is: *'are you aware of the recommended procedure in case of a fire?'* or *'would you say that you have enough information in order to prepare for a storm, or do you need more?'*

There are four main problems with using this approach to collecting data on *actual* preparedness:

- people often don't know what they don't know; for example, respondents frequently have difficulty saying why they haven't installed a smoke alarm
- there may be a bias involved in such questions, in that respondents may not feel comfortable indicating that they don't know something or haven't taken an action when it is perhaps clear that they should have
- this is an easy question for respondents to answer without really thinking about their response, as usually only a yes/no response is required, and, most importantly
- in such a question respondents will rate themselves in terms of internal criteria rather than the criteria that the researcher has defined; that is, the respondent assesses their knowledge or behaviour against their own beliefs of what it should be, which can be very different from what emergency management agencies believe it should be.

If *actual* preparedness and awareness is to be measured, an alternative to self-assessments is to ask respondents to report their understanding of a situation or the steps they have actually taken. This can then be matched to a set of 'ideal' knowledge and/or actions, to determine whether the respondent's situation is acceptable or not.

Interpreting results

Once data has been collected on awareness and preparedness for emergencies, it will need to be carefully interpreted. Some points of note:

- intended behaviours in the case of an emergency may not be what individuals actually do in such circumstances (Rohrmann 1998)
- aggregation may hide or distort underlying differences or changes in data items
- estimates from sample surveys need to be examined in light of associated sample errors
- sample data should be weighted so that it is representative of the target population
- hidden variables may impact on the data items being measured.

Where to from here for emergency management agencies

Collection of data on emergency awareness and preparedness is not a replacement for current operations in this field of the emergency management agencies, but supplementary to them. It is hoped that this article, and the associated report on which it is based, provide a starting point for emergency managers. Probably the biggest single concern for measuring awareness and preparedness will be obtaining a balance between statistical depth and rigour, and the constraints imposed by limited resources and a large conceptual framework for which information is required. A compromise may be sought where the agencies attempt to ascertain *some* information with a study that meets minimum statistical requirements. What compromises are appropriate will be highly dependent on the final research questions and their relative priorities for emergency managers.

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About the Author

Jessica Enders, BSc (ANU), has recently joined Colmar Brunton Social Research as a Quantitative Account Manager after spending five years as a methodologist and statistical consultant at the Australian Bureau of Statistics. She has experience with all stages of the survey design, implementation and analysis, but is particularly interested in questionnaire design and the cognitive issues surrounding the answering process.

Jessica is looking forward to continuing to work on information and statistical issues, such as behavioural change, for the emergency management sector.

This article is based on a report resulting from a joint project of the Australian Bureau of Statistics and the Victorian Department of Justice.

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This article has been refereed

Severe Local Wind Storms and their effect on residential Mosman Park

by Mal Cronstedt,
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Fire & Emergency Services Authority
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Introduction

This paper will analyse the historical and possible impact of *Severe Local Wind Storms* (SLWS) on the Local Government area of Mosman Park.

It will describe the characteristics of SLWS, their historical and possible effects on the people, places and infrastructure of Mosman Park. It will also incorporate some relevant risk assessment and evaluation tools and outcomes for discussion. Some suggestions as to treatments will also be posited.

The process and steps advised by Risk Management Standard AS/NZS 4360:1995 (as adapted for emergency management) will be followed. A basic knowledge of the Standard is assumed.

Context

The study area is within the Local Government of Mosman Park and immediate environs (*Figure 1*). The Local Government (LG) is the prime agency responsible for delivering basic urban services that affect the community's viability such as rubbish collection, building approval and community services. It also deals with local planning matters.

The area is covered by the Metropolitan Emergency Management Plan, which predominantly deals with emergency response arrangements and structures. All emergency and support services are within a few kilometres of the area, though the State Emergency Service, which is the designated Hazard Management Agency (HMA) for storm damage, is located some 10 kilometres away. HMAs are designated within State Emergency Management Advisory Committee (SEMAC) Policy Statement Number 7 (PS7), which also details the State's emergency management arrangements.

Identification (of risks)

The following section outlines the first stage of the risk management process. This stage provides the opportunity to identify *what* might happen and *how* it might happen. The author has used terms adapted by emergency managers for the same stage by substituting the 'what' with Sources of Risk and 'how' with Elements at Risk.

Source of risk

The Source of Risk identified is 'Severe Local Wind Storms'. SLWS have been variously termed '...willy-willys, whirlwinds, cock eyed bobs, cyclones, freak wind gusts, wind blasts, tornadoes, tornadic squalls or simply squalls...' (Foley et al 1989, p3). There were 51 recorded SLWS events during the period 1958-1988 that caused significant property loss (Foley et al 1989, p3) in Western Australia.

Table 1 lists SLWS events that have affected the study area to date.

Foley & Hanstrum (1989) suggest that, based on historical data, the frequency of SLWS is about 1.6 per annum. Most SLWS occur along the coast between the Perth metropolitan area and Busselton some 250 km South. They are most common in June and can occur at anytime of the day.

SLWS events have been estimated to travel at speeds up to about 80 kilometres per hour and their effects are generally confined to a path some 100-300 metres wide and sometimes several kilometres in length.

Elements at Risk

The elements at risk include structures and their components, the occupants of residences and above-ground utilities (such as power and occasionally telephone).

Mosman Park is an urban coastal Local Government (LG) 14 Kilometres West of Perth Central Business District (CBD) and 3 kilometres East of Fremantle CBD. *Figure 1* provides an overview of its location and major features.

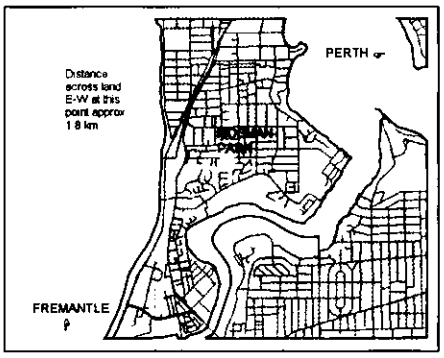


Figure 1: Mossman Park and immediate environs

The LG is almost entirely residential with a mix of single and two storey dwellings and a small number of apartment style buildings up to six storeys high. The buildings vary in age from the early 1930's, though the author estimates a median age of approximately 1960 (Barradeen, pers. comm.). Most structures are of double brick and tile construction. There a small number of retail outlets confined to three small areas. There are no industrial sites. There are a number of public buildings including five schools.

Standards of construction vary with age and the building standards that prevailed. It is reasonable to assume that the older building stock will not possess the same structural integrity due to standards applied at the time of construction and general deterioration over time (Barradeen, pers. comm.).

The 1999–2000 WA Municipal Directory indicates a population of 8,200 housed in 3,500 dwellings in an area of 4.3 square kilometres.

Date	Location	Comments
24 July 1958	Mosman Park	significant property loss
13 June 1969	Swanbourne/Peppermint Grove	suburbs immediately adjacent to Mosman Park
25 August 1999	East Fremantle	suburb immediately adjacent to Mosman Park - severe damage to apartment block and numerous houses

Table 1: events that have affected the study area to date

According to the Australian Bureau of Statistics 1991 Census the median age was 32. The same census illustrated some interesting demographic profiles. It is clear that there is great diversity of population across the LG. It is apparent that there are a broad range economic and social profiles within the LGA. For instance, an area approximately 0.25 kilometres square located on the western edge of the LG — in which almost all of the high density apartment style buildings are located — is an area containing the lowest incomes, non-english speaking persons, minority groups, unemployed, least qualified, single parent families and the greatest social dependence. The rest of the LG is at the middle and higher end of the social spectrum, containing high income earners, highly qualified persons, the least unemployed etc.

The *Table 2* illustrates the potential interaction between the identified source of risk and the elements at risk using Salter's Risk Identification Matrix (1997, p14).

Elements at Risk	Source of Risk - SLWS
Lifelines & Infrastructure: ground utilities, roads, rail, communication towers	Direct wind damage or via wind-borne Above-debris/tree falls
Industry & Commerce: Shops – small business	Direct wind damage to structures that limits or stops business continuance. Wind borne debris/trees limits or stops access to premises
Citizens: individuals and families within and to/from dwellings	– Injury or death due to wind-borne debris/trees – Dwellings damaged by direct wind damage or by wind-borne debris, property loss possibly rendering dwelling uninhabitable. – Income or other social opportunity loss (appointments etc) due to disruption to lifelines/ infrastructure
Environment: streetscape, park and residential lot vegetation (predominantly trees – no 'natural' vegetation)	Vegetation loss by direct wind damage

Table 2: the potential interaction between the identified source of risk and the elements at risk using Salter's Risk Identification Matrix.

Analysis

Criteria

For the purposes of this paper, the following criteria have been established. (It is understood that under normal circumstances a community consultative process would inform the criteria selected.)

- Lifelines & infrastructure — no more than one 24 hour outage in any one service over 5 years.
- Industry & commerce — no more than a week's outage for any one business over five years.
- Citizens - no more than one death over ten years. No more than one injury per year. No more than one damage event rendering a dwelling uninhabitable over ten years. No more than one event isolating persons from normal activities for more than 24 hours over a five year period.
- No more than one event rendering a park, roadway or path unusable for more than 24 hours over five years

Existing controls

The following controls, listed against the elements at risk, are currently in place as far as the author can ascertain.

- Lifelines & infrastructure — design and construction of rail and telecommunications (towers) facilities incorporates some ability to withstand extreme wind events. Telecommunications cables are predominantly under-ground. The electricity grid has some very limited capacity to withstand extreme wind events. Vegetation management to limit powerline interference is undertaken regularly. A program of placing the electricity grid underground is set to commence in 2001. Large response capacity by relevant service companies are all within a few kilometres.
- Industry & commerce — new structures are built to the Building Code of Australia and therefore have some capacity to withstand strong winter winds. Older structures are built to a variety of dated standards.
- Citizens — structures vary in their capacity to withstand strong winds based on their age and the standards prevailing. It is apparent that some provision for better wind resistance construction (e.g. tile tie-downs) in dwellings built in later years. State Emergency Service (SES) prevention and preparedness advice provided through media 'community service' style announcements and publications(very limited) aimed at vegetation hazards and household response preparedness. Response service provided by SES and Fire & Rescue Service (FRS). FRS station is within 3 kilometres and SES is located some 10 kilometres away.
- Environment — regular vegetation maintenance/management in all parks and reserves undertaken by LGA. Private vegetation managed on an individual property-by-property basis.

Frequency/likelihood

Based on historical data (Foley & Hanstrum, 1989), the frequency of SLWS has been 1.6 per annum. Given that the study area occupies a small slice of the coast, 1.6 events per annum within the 'slice' are unlikely. It is however clear that they can and do occur in the study area, though the frequency is hard to estimate. Therefore the likelihood of SLWS impact is, in the author's opinion, certain, the timing and interval is not known.

Impact

The impact characteristics of SLWS have been well documented (Foley & Hanstrum). A typical SLWS will create an impact zone of approximately 100-300 metres wide and up to several kilometres long. Given this scenario, if one were to overlay a 200 metre wide SLWS path across the full width (2 kilometres) of the Mosman Park LG in a central location, the potential damage could include hundreds of dwellings, at least one school, two small businesses and an apartment block.

Injuries and death are possibilities. Damage to the power grid would be extensive, possibly leading to extended power outages. Extended power outages would affect food storage and traffic control devices. Access to and from the area would likely be affected by damage debris and damaged vegetation. Some families and individuals would be homeless.

Assessment

Table 3 is an assessment of risks against the established criteria.

Discussion

It is apparent that there are some common themes that run through the risk assessment. They are:

- ***The power grid*** is one of the most vulnerable elements at risk. Failure of this has considerable 'knock-on' effects as infrastructure, commerce and industry and citizens are dependent on its supply.

Element at risk and criteria	Assessment commentary
Lifelines & infrastructure—no more than the one 24 hour outage in any one service over 5 years	The most vulnerable element appears to be power grid. Failure of same has numerous knock-on effects.
Industry & commerce—no more than a week's outage for any one business over Infrastructure five years	Vulnerability mainly linked to standard of structure. Dependence on lifelines/ (power) also noted.
Citizens—no more than one death over ten years. No more than one injury per year. No more than one damage event rendering a dwelling uninhabitable over ten years. No more than one event isolating persons from normal activities for more than 24 hours over a five year period.	Vulnerability mainly linked to standard of structures. Dependence on lifelines/ infrastructure (power) also noted. Vegetation loss may, in some instances, contribute to property loss.
No more than one event rendering a park, roadway or path unusable for more than 24 hours over five years.	Vulnerability of parks, roadways and paths linked to vegetation loss.

Table 3: assessment of risks against established criteria.

- ***Structural standards*** affect commerce and industry and citizens ability to withstand SLWS. A structure's age, standard of construction and extent of maintenance are all like factors in this category.
- ***Vegetation maintenance*** affects the vulnerability of structures.

It is the author's contention that the order of risk priority for treatment is as listed above i.e. 1. Power grid, 2. Structures and 3. Vegetation.

Treatments

Table 4 provides an overview of the three priority risks, their treatment options and brief discussion points.

Treatment challenges

Central to the success of implementing treatments will be the involvement of the LG, the Mosman Park community generally and other stakeholders such as the utility companies.

Given LGs pivotal role in the provision of local services, links with numerous local community groups and its representative Council, it appears to be ideally placed to bring together the elements necessary to give effect to reducing the communities exposure to SLWS. Most of the treatment options listed in the table are linked to the LGs responsibilities (particularly Vegetation and Structures through LG services or building controls). It is often said that a LG is 'closest to the people' and 'knows' its community more intimately than any other layer of government. Though this paper has highlighted a potential risk to community safety, there are numerous priorities and attendant resource demands that face the LG—the SLWS risk may not rank highly in view of the competing demands!

The perception of risk within the community and whether SLWS is seen as a risk worth doing anything about, will be a significant challenge to implementation.

Element at risk	Treatment option	Discussion
1. Power grid—prevention	Strengthen existing systems. Accelerate 'under-grounding' program	Both would reduce vulnerability of grid in short and long term, though both costly.
Power grid—preparedness	Identify areas of weakness in system. Prepare contingency plans.	The identification of weaknesses would be very useful to target works. Contingency plans ought to exist in any event.
Power grid—response	Provide more response services.	Existing response difficult to improve without considerable cost implications and minor benefits.
Power grid—recovery	Prepare alternative power plans. Provide more assistance to business/citizens.	Contingency plans ought to include alternatives and assistance programs.
2. Structures—prevention	Audit building stock and identify weaknesses. Mandate higher standards across all buildings. Provide subsidies for building upgrades	An audit would be essential in order to target areas of weakness. It may also bring other benefits and be part of a wider study.
Structures—preparedness	Prepare contingency plans (alternative accommodation etc).	Ought to be part of an essential Emergency Management (EM) Plan for the LG.
Structures—response	Provide closer/better/more resources.	Support to/for the SES unit may need to be reviewed to ensure adequate support.
Structures—recovery	Produce community recovery plans and provide more programs/resources.	Ought to be part of the LGs EM Plan and an annual budget item.
3. Vegetation—prevention	Audit all vegetation for weaknesses. Institute vegetation modification plan based on identified weaknesses. Provide greater public education.	An audit is essential to enable targeted programs. It may also form part of a wider study. Public education ought to be considered in the LGs EM Plan.
Vegetation—preparedness	Provide public education as to citizen/business preparedness.	Ought to be part of LGs EM plan. Alternatively or in addition liaison with SES to build-on or extend existing programs.
Vegetation—response	Plan for and provide more resources.	Ought to be park of a Parks and Reserves management plan for the LG.
Vegetation—recovery	Plan for and provide more resources.	Ought to be park of a Parks and Reserves management plan for the LG.

Table 4: an overview of the three priority risks, their treatment options and brief discussion points

The LG ought to be the integrative and educative agent through which the community is made aware of the risk, is convinced that the risk is not sufficiently attended to and that behaviour must change to lower the communities risk (the treatments).

Another challenge involves the company that controls the power grid—Western Power. Though there is no reason to suspect that the company will not regard the risk at serious, there are unique pressures that commercial operations face. Western Power is a corporatised government authority i.e. it is structured and acts like a commercial entity while it remains publicly owned. The company may consider the risks to be acceptable and may not be willing to expend resources in a limited area for little perceived commercial benefit.

The ultimate measure of success will be to see if anything changes in terms of SLWS risk in the coming years. The author has suggested some possible SLWS risk criteria earluier in this paper. The criteria—either in the original form or as a result of a more comprehensive and community based study—can be used to meaure performance over time. As they say, time will tell!

Conclusion

This paper has provided a brief examination of risks associated with Severe Local Winter Storms in the LG of Mosman Park. Practically all of the risk analysis and assessment has been qualitative. Only the broad scale estimate of SLWS frequency was quantitative, based on outside research. By describing the effects of the chosen source of risk on the chosen area and illustrating some of the impact parameters by description and qualitative terms, a general 'feel' for the level of risk has been obtained.

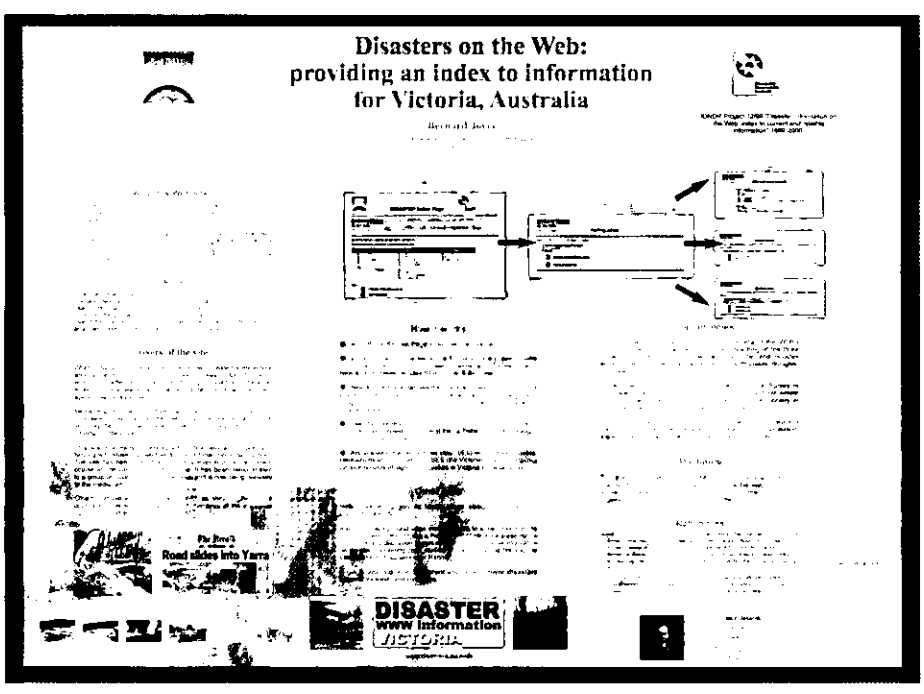
The author avoided the use of matrices that directly set two dimensions against

New Disaster Website

Disasters on the Web: providing an index to information for Victoria, Australia

DISASTER
WWW information
VICTORIA

A new Web site launched in March 2001 at GDIN2001 in Canberra has been developed under a grant from EMA to explore how disaster-related information on government and other Web sites can be located and made available to the community.



Why this Web site?

Disaster information is hard to find quickly on the Web, and what is found may be incomplete or inaccurate. However, much information is available if a thorough search is made.

Rapid access to this data is important both for the disaster worker, the media and the general public. This Web site has been set-up to provide an up-to-the minute clearing house for such data for Victoria, and could be extended to cover Australia and the South Pacific region.

This Web site is designed to help 'improve community awareness of risk, preparedness and response' (Australian Goal 1) and also provides useful information for schools (IDNDR Major Theme 2. Education 2000) in the primary, secondary and tertiary curricula, by making use of the Internet, and developing

each other by choosing to describe the context and what might be expected. Naturally, should the study have been more thorough and required more definitive recommendations to the LG for instance, a number of qualitative and quantitative studies may have been required to support more detailed recommendations.

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and evaluating the effectiveness of a Web-based current disaster information service.

Likely users

The site is aimed at individuals and groups, such as families, travellers, retired people, as well as schools, Universities, and organisations such as councils and shires, and community volunteer groups. Others involved with disaster work, such as local disaster workers, media reporters, and members of the insurance industry, should find the site useful.

Increasingly individuals and groups in Victoria have Web access but may be still learning how to find information, and having difficulties getting prompt and easy access to information from rapidly-growing and complex government Web sites.

Experience in developing the site has demonstrated that disaster information is often posted first on media sites - newspapers, radio, and television - and such sites as the Bureau of Meteorology. Using these sites, and understanding their techniques of posting and archiving information, can be a problem to many users, and the new disaster Web site helps by providing appropriate direct links.

The Web site

The site provides a starting point for seeking disaster information for Victoria, with a guarantee of up-to-date and accurate information, and links to information on individual disasters, indexed by type. Geological, meteorological and human-caused disasters are all included. Links to further information on the region in which a disaster has occurred e.g. satellite imagery, maps, climatic data, links to researchers with a prior knowledge of the area, and to available scientific and other publications, reports and data sets is also being provided when available.

In addition, the site is developing data sets of background information, including information on the study and understanding of such disasters as earthquakes, landslides, floods, storms and fires. A related new site which is beginning to develop information on the risks and hazards associated with possible future volcanic activity in Southeastern Australia is also being linked to this disaster Web site for Victoria.

The site is already benefiting school teachers and pupils and helping with student project work in a Victorian secondary school. Trials of the site have been carried out at university level in a natural hazard course at The University of Melbourne. It has been demonstrated to a group of Australian disaster workers and is now being released to the media, and the general public.

A ***project background*** page provides links to discussions of the concepts behind the project, and includes a PowerPoint conference presentation and paper, and discussion papers on searching for disaster information on the Web, including case studies of the January 2000 Hazelwood fire and the earthquake and tsunami near Rabaul in November 2000.

The site is currently housed on a University of Melbourne server, and is most easily located via the Web URL: www.disasters.au.com

Further reading

Joyce, E. B. 1999. Disaster information on the web: providing an efficient index to current and reliable information, Disaster Prevention for the 21st Century, Proceedings of the Australian Disaster Conference 1999, Canberra, 1-3 November 1999, pp. 321-326.

Further information

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The project has been supported under IDNDR Project 12/99 'Disaster Information on the Web: index to current and reliable information' 1999-2000.

Book Review

Book Review: Risky Practices – A Counsellors Guide to Risk Management in Private Practice

By Nigel McBride & Michael Tunnecliffe
Published by Bayside Books
132 pages, ISBN 1 876671 01 7

Reviewed by Cait McMahon MAPS
Counselling Psychologist

This accessible book sets out a challenge to counsellors from all modalities to 'tighten up' the operation of their practices and limit the possibility of litigation stemming from lax protocols and documentation. 'Risky Practices' is a refreshing read on risk management principles within the counselling fraternity, offering tools to those in the industry to 'clean up' the proverbial backyard in regard to ethics, protocols and professional boundaries.

This easy to read book written by both a legal professional and a psychologist combines first hand experience of the pitfalls of running a private counselling practice, with legal responsibilities and expectations from an Australian perspective.

Blending three styles of instruction the book lays out, in the first instance, 'some fundamental legal, ethical and risk issues facing counsellors' in a didactic form. It illustrates how issues such as 'failure to properly diagnose', 'violating sexual boundaries' and 'ownership of records' to name a few, are regarded from a legal perspective.

This part of the book gives pithy summaries called 'Risk Nutshells' following each major section, which allows the reader to not only reinforce the information given but allows the 'time challenged' professional to get the most important points without reading the whole section if they so choose! This is undoubtedly the most important part of the book, relaying vital information in regard to legal responsibilities in counselling practice.

The second teaching method of the book uses a 'question and answer' style. Presenting 50 questions and practice scenarios, this section is stimulating as it operationalises the previous information, applying it to case scenarios. Whilst there are a number of questions and answers that are basic common sense, there are also a number which are more in-depth and challenging to the more experienced practitioner. It would have been helpful if this section had put the scenarios into some sort of order with headings for easy referencing later on. Groupings such as 'Client Files' 'Professional Fees' and 'Subcontracting' would have been helpful.

The final section of the book is the 'Appendices', which offers very tangible examples of 'Client Engagement Agreement's' 'Confidentiality Agreement' and 'Important Facts about Counselling'.

The authors rightly preface this section by stating that the examples presented need to be adapted to your own situation. To use them in their entirety, as presented, would indeed be cumbersome and send many clients running. However, the examples do point out pertinent points that should be covered before a client actually starts the counselling process.

This not only allows the client to be fully informed as to what they are undertaking, it also sets a good foundation of psychological boundaries for the duration of the counselling relationship.

The health profession is increasingly being confronted with litigation. 'Risky Practices' certainly offers the counselling professional basic tools to pre-empt and hopefully circumvent any potential legal action. The book is generally 'user friendly' and easy to read.

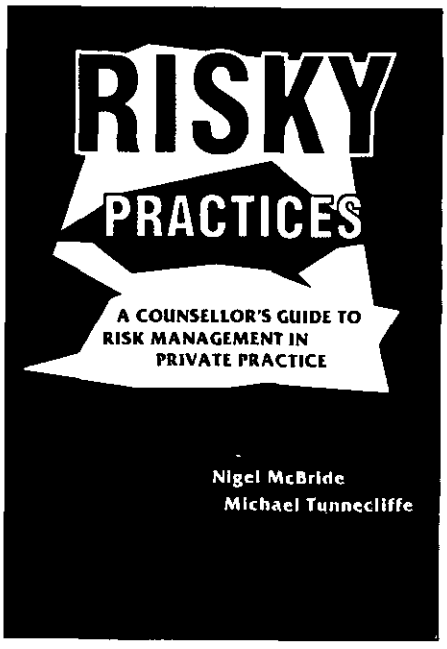
The authors have made a potentially 'dry' subject such as litigation quite engaging through their use of different methods of disseminating this important information. However, I think that the counselling professional needs to use discretion and thought in how to apply some of the given examples as this will most certainly shape, consciously or subconsciously, the counselling relationship to come.

A paragraph in the introduction explaining 'counsellor' as including 'clinical psychologists and those with similar postgraduate qualifications as well as other registered psychologists' is unnecessary and a little divisive. I don't think there is any real need to draw a distinction between a clinical psychologist and 'other registered psychologists', or indeed other qualified counselling professionals.

The book is a little 'black and white' at times and doesn't give a lot of room for the breadth of counselling relationships experienced in the therapeutic milieu, such as '...counsellors should generally avoid intentional physical contact with their clients.' (p.20).

It is the experience of many counsellors that there are times when physical contact may be warranted—of course, after permission has been sought. Physical touch in therapy was the focus of significant discussion at a world trauma conference held in Melbourne in 2000.

Despite these few areas of concern *Risky Practices* gets it's major point of 'disclose and document' across well. It is an informative and challenging book, which needs to be read in conjunction with thoughtful reflection of one's own practice – this will allow appropriate application of the information according to each counselling circumstance. At the end of the day, I guess the 'proof is in the pudding'. So I ask myself 'does *Risky Practices* motivate me into tightening up my protocols and procedures?' and I reply, 'Yes it does'.



Cait McMahon is a member of the College of Counselling Psychologists and maintains a busy private counselling practice in Melbourne. She is also currently undertaking further postgraduate studies in trauma, focussing predominantly on secondary and vicarious trauma.

As well as study and private practice Cait consults to organisations on a broad range of issues and runs 'follow-up' post-traumatic stress groups for Vietnam Veterans' and partners at the Vietnam Veterans' Counselling Service. Cait is the Manager of Trauma Services at Dinjerra Counselling and Development and is a mother with three sons.

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For more information on price and availability contact:
Emergency Support Network
PO Box 106, Palmyra WA 6957
phone: 08 9430 4377, Fax: 08 9430 5017
email: order@emergencysupport.com.au

Disaster Events Calendar

January 19-23, 2002
Dhahran, Saudi Arabia

Symposium on Maritime Disaster Management
Organised by: Frontier Guard General Directorate, Ministry of Interior, Kingdom of Saudi Arabia
Contact: Dr. Abdulaziz M. Al-Suwailem
Chairman, Organizing Committee, Symposium on Maritime Disaster Management
King Fahd University of Petroleum and Minerals
P.O. Box 5042
Dhahran 31261, Saudi Arabia
phone: +966 3 860 1391; fax: +966 3 860 1205
email: seasymp@kfupm.edu.sa
www.saudi-sea-symp.org/

January 27-February 22, 2002
Geneva, Switzerland

International Diploma in Humanitarian Assistance (IDHA 9)
Offered by: Center for International Health and Cooperation (CIHC); Fordham University; University of Geneva; and Royal College of Surgeons, Ireland
Applications should be submitted to:
Michel Veuthey, Academic Director, CIHC
email: michel.veuthey@ties.itu.int
www.idha.ch

January 28-29, 2002
Las Vegas, Nevada

Disaster Management 2002
Host: NIGI, the National Institute for Government Innovation and George Washington University
phone: 888 670 8200; fax: 941 365 2507
email: register@iirusa.com
www.nigi.org

January 31-February 3, 2002
Orlando, Florida

Disaster 2002
Sponsor: Florida Emergency Medicine Foundation, in collaboration with the Florida College of Emergency Physicians
The organisers of this annual international disaster management conference are currently seeking presentation proposals
Contact: John Todaro
Director of Education
Florida Emergency Medicine Foundation
Florida College of Emergency Physicians
3717 South Conway Road
Orlando, FL 32812-7607
phone: 800 766 6335 or 407 281 7396
fax: 407 281 4407
email: jtodaro@fcep.org
Details and a proposal form are available from www.fcep.org and www.fcep.org/callforpreframe.htm

February 6-8, 2002
Lubbock, Texas

Engineering for Extreme Winds 2002
Host: Wind Science and Engineering Research Center, Texas Tech University
Contact: Mary Ruth Bishop
Division of Continuing Education
Texas Tech University
Box 41006, Lubbock, TX 79409-1006 USA
phone: 806 742 7200 ext. 262 or 1 800 692 6877
fax: 1 800 742 7277
www.dce.ttu.edu

February 19-22, 2002
Fukuoka, Japan

Sixth Asia-Pacific Conference on Disaster Medicine
Sponsors: Ministry of Health, Government of Japan, and many others
Topics to be covered: How should be Disaster Medicine in the 21st Century; New Disasters resulting from Environmental Changes in the Earth; New Technologies in Disaster Management; Evaluation of Disaster Medical Responses following Utstein Template: A Preliminary Approach; Education in Disaster Medicine; Best Decontaminative Maneuver in Chemical Hazards; Disasters in Asia and Disasters in Other Countries
Contact (program and scientific content):
Congress Organising Committee, Department of Traumatology and Critical Care Medicine, Kurume University School of Medicine
Secretary General: Takahisa Kawashima M.D. Ph.D.
67, Asahi-machi, Kurume
Fukuoka, 830-0011 Japan
phone: +81 942 35 3311(ext: 3553)
fax: +81 942 35 3920
email: deptccm@med.kurume-u.ac.jp
www.trip.co.jp/6thapcdm
Contact (registration information):
KJ Planning Inc., 1F Shin KBC Bld., 1-1-35 Nagahama, Chuo-ku, Fukuoka, 810-0072, Japan
phone: +81 92 751 3244; fax: +81 92 726 2384
email: 6thapcdm@trip.co.jp
www.trip.co.jp/6thapcdm

February 24-27, 2002
San Diego, California

Solutions to Coastal Disasters 2002
Organisers: Coasts, Oceans, Ports, and Rivers Institute of the American Society of Civil Engineers Coastal Zone Foundation and others
The four main conference tracks are Coastal Storms, Seismic Effects, Impacts on Climate Change, and Shoreline Change
A call for papers has been issued
Contact: Lesley Ewing
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105
phone: 415 904 5291; fax: 415 904 5400
email: lewing@coastal.ca.gov
or- Louise Wallendorf
Hydromechanics Laboratory
U.S. Naval Academy
590 Holloway Roa
Annapolis, MD 21402-5042
phone: 410 293 5108; fax: 410 293 5848
email: lou@usna.edu
www.asce.org/conferences/cd2002/index.html

March 2002
Buenos Aires, Argentina

Regional LIDERES 2002 Course on Disaster Management
Hosted by: Pan American Health Organization (PAHO)
Directed at top-level professionals with broad experience in disaster situations from a wide variety of organizations and sectors (health ministries, national disaster offices, the Red Cross, financing institutions, U.N. and other cooperating agencies)
Course conducted in Spanish
Contact: PAHO, Emergency Preparedness and Disaster Relief Coordination Program
525 Twenty-third Street, N.W.
Washington, DC 20037-2895
fax: 202 775 4578
email: curso-lideres@paho.org
www.disaster.info.desastres.net/LIDERES

March 6-7, 2002
Springfield, Illinois

2002 Annual Conference of the Illinois Association for Floodplain and Stormwater Management
Contact: Illinois Association for Floodplain and Stormwater Management
153 Nanti Street, Park Forest, IL 60466
or Jerry Robinson, Conference Chair
Christopher B. Burke Engineering
9575 West Higgins Road, Suite 600
Rosemont, IL 60018
fax: 847 823 0520
email: jrobinson@cbbel.com

March 25-28, 2002
Tampa, Florida

National Floodproofing Conference II
Sponsors: Association of State Floodplain Managers (ASFPM) and others
Contact: Diane Brown Watson
ASFPM, 2809 Fish Hatchery Road, Suite 204
Madison, WI 53713
phone: 608 274 0123; fax: 608 274 0696
email: asfpm@floods.org
www.floods.org

March 18-20 2002
Lyon France

Tunnels in Major Infrastructure Projects Second International Conference
Contact: Stephanie Whitham
Tunnel Management International
PO Box 452, Kempston
Bedford MK43 9PI UK
phone: 44 0 1234 841375; fax: 44 0 1234 854756
www.itc-confrences.com

April 13-17, 2002
Atlanta GA

2002 National Disaster Medical Systems (NDMS) Annual Conference
Sponsors: U.S. Department of Health and Human Services, Department of Defense, Department of Veterans Affairs, and Federal Emergency Management Agency
Contact: National Disaster Medical System
National Headquarters
12300 Twinbrook Parkway, Suite 360
Rockville MD 20857
phone: 301 443 1167; fax: 800 872 5945
email: ndms@usa.net
www.oep-ndms.dhhs.gov