impact

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Teams work together during quake response

10th Annual CDEM Conference
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Cover image: A variety of response teams worked side by side to assist in the recovery from the Canterbury earthquake. Here a civil engineer, along with New Zealand Red Cross and USAR team members, assesses damage to a property.

impact

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Common acronyms
MCDEM Ministry of Civil Defence & Emergency Management
CDEM Civil defence emergency management
EOC Emergency Operations Centre
EMO Emergency Management Officer

Visit us on the web
www.civildefence.govt.nz
www.getthru.govt.nz
www.whatstheplanstan.govt.nz

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EDITORIAL
John Hamilton, Director Civil Defence

Focussed on recovery

I was reminded recently of a call received by the Duty Team immediately after a quite large earthquake had occurred close to the Auckland Islands. The Japanese official calling was querying what assistance New Zealand required given the magnitude of the quake and its close proximity close to Auckland.

The Duty Officer patiently clarified the situation by pointing out that the Auckland Islands are some 400 miles south of New Zealand and there had been no damage experienced. There are two lessons here: first, don't assume, check! Second, without people and the communities in which they live and work, the natural hazards we deal with predominantly do not pose risks. It is people and communities that are the focus for all our efforts.

As this issue of *Impact* is distributed, the recovery process is well under way in Canterbury and at the same time we note with dismay the loss of life that occurred recently in the tragedy at the Pike River coal mine. These are two communities dealing with the impact of living with natural hazards. In civil defence emergency management we put tremendous effort into promoting and undertaking initiatives that generate greater resilience in our communities. We take great pride in our ability to get through the tough times such as those created by these two very different emergencies.

But it is wrong to assume communities have the required resilience. It pays to check, and even if the community gives the impression they are coping, take a second look. Be subtle and adjust the mode of contact and the style of enquiry to look deeper in case the ability to cope has worn thin. Be prepared to push forward support and specialist services to help affected communities, even though they say they are alright.

Recovery is a long process that clearly lacks the adrenalin, hype and immediacy of the response. I suppose it is not surprising, then, that we might have placed less emphasis on the recovery phase and that its processes are less well known and perhaps less developed. This needs to change and the wash-up after the Canterbury earthquake will be expected to identify and address shortcomings in recovery. I think we need to improve our understanding and management of recovery to ensure that the communities in the impacted area are given the resources and support needed to get them back towards normalcy.

Like response, recovery takes expert skills and advice, thorough co-ordinated planning and firm and influential leadership, although in this phase, the leadership has to be blended with empathy and compassion. If we can do this for a response, why is it that we tail off when it comes to recovery?

Recovery is a long process that clearly lacks the adrenalin, hype and immediacy of the response

Are we deterred by the so-called 'softer aspects' necessary to engage with the community and to help them recover? It is a different phase and it does require an adjusted mode of operation but the aim of the effort remains constant – it is the community. They deserve the same attention and focus in the recovery phase as they are assured in the response.

Understanding the community and its vulnerabilities and strengths should assist not just the response, but also the recovery by providing indicators and approaches that will ensure the community gets functioning fully again. Being under-prepared for recovery undermines all the effort that goes into a good response, risks backlash and erodes community resilience. ■

MCDEM logo gets makeover

You may have noticed the gradual introduction of a new logo and colours used by the Ministry of Civil Defence & Emergency Management. On the way out are the orange and green colour scheme and the so-called sheltering tree logo that have been used on MCDEM business cards, letterheads and the website.

The new logo uses the traditional CD logo and the blue and yellow colours widely associated with civil defence and emergency management in New Zealand. The typeface is the same as that used on several CDEM Group logos.

The Director, John Hamilton, says the use of the well-recognised CD logo in a crisp and simple design clearly identifies the Ministry and its function and reinforces the connection between the Ministry and those undertaking CDEM roles in the Groups and local government. The new logo is being phased-in electronically and on the stationary used by the Ministry as well as the publications it produces. It will appear later in the website as part of a major revision of the site. ■

The old logo: colours and design elements bare no clear relationship to civil defence.

The new logo clearly aligns the Ministry with civil defence to aid both key stakeholders within the CDEM sector and, importantly, members of the public.

Get Ready gets a makeover

Earlier this year the Ministry published *Working from the same page: Consistent messages for CDEM*. This reference document was developed to help those responsible for providing CDEM information to the public to provide consistent messages, recognising that information is the key to understanding hazards, managing risks, and for helping people to take the appropriate actions in an emergency.

The Get Ready, Get Thru campaign is the Ministry's primary tool for communicating important CDEM information to the public. In order to ensure its messages aligned to the consistent messages document, a major revision was undertaken of the printed and online material.

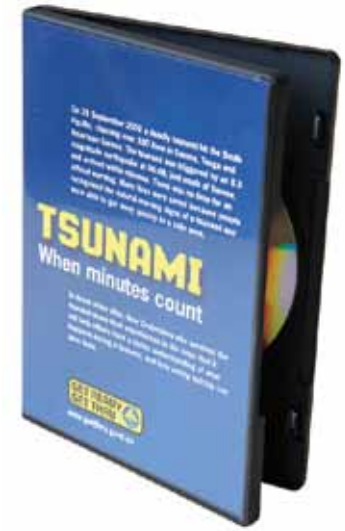
The revised Get Ready brochure includes more information on what to do for each of the hazards. There is also new information about emergency sanitation, evacuation and people with disabilities. The revision removes some of the previous ambiguity around emergency survival items and getaway kits and whether to shelter in place or leave.

Once the printed brochure was revised, we also took the opportunity to revise the Get Ready Get Thru website. Navigation has been simplified and the look and feel is cleaner and less cluttered making it easier to access information and aligning it with the revised printed brochure. All information on the site is also available in simplified Chinese, traditional Chinese, Hindi, Korean, Maori, Samoan, Tongan and Arabic. The new site, New Zealand's most extensively translated, is now live.
Visit www.getthru.govt.nz. ■

The Get Thru website has been translated into eight languages to make essential civil defence information available to as many people as possible.

New CDEM public education resources

In addition to brochures, display stands and promotional items (bags, drink bottles and water containers), some new resources were made available this year to support local public education activities. CDEM staff are encouraged to utilise the resources when engaging with communities.



Tsunami – When Minutes Count (DVD and online): New Zealanders who survived the 2009 Samoa tsunami share their stories in an effort to encourage others to be better prepared. Also includes advice from CDEM and GNS Science to improve understanding of tsunami and the actions to take, especially for local source tsunami. A copy was sent out to all councils in August.

Get Ready Get Thru Sign Language (DVD): Resource for the deaf community and those with hearing impairment which provides the key CDEM messages in both sign language and captions. The resource is distributed through Deaf Aotearoa and the National Foundation for the Deaf. Copies were sent to all councils in August.

RESOURCES IN THE WORKS FOR DISTRIBUTION BEFORE JUNE 2011

Christchurch Quake 2010: Interviews with those affected by the September 2010 quake and the responding agencies to help improve understanding of the impact of a major earthquake and the actions to take to keep safe during and immediately after. Copies will be made available to all councils and also offered online.

Get Ready Get Thru resource for the blind community (Audio CD): The resource will provide the key CDEM messages for the blind and visually impaired community. Project is being undertaken with the Royal New Zealand Foundation of the Blind.

Turtle Safe for preschoolers (DVD): A revised version of the Turtle Safe video which was developed in the 1990's by Auckland City Council. We are working with Auckland Council to produce a new version of the resource for children aged 2-5 to illustrate what to do during and after an earthquake. The resource will incorporate the current turtle character as well as Stan from the What's The Plan Stan resource.

For further information please contact: chandrika.kumaran@dia.govt.nz ■

Stan goes to Washington

Stan, the lovable character from the What's The Plan Stan? education resource, had his moment of glory in Washington DC in September this year.

Following a visit from a Federal Emergency Management Agency (FEMA) delegation from USA earlier this year, New Zealand received an invitation to participate in their National Summit on Youth Preparedness. This gathered stakeholders from across the nation and internationally to focus on youth preparedness education.

The Ministry's Public Education Manager, Chandrika Kumaran, attended the summit to share our experience of developing What's The Plan Stan?. Designed specifically for children aged 7-12, Stan aims to build a foundation of preparedness and empower young people by giving them the knowledge and skills to keep safe when disaster happens.

The programme is aligned to the New Zealand primary and intermediate school curriculum. It provides information for teachers and school management to support disaster preparedness activities, simulation exercises and safety drills. Teaching resources include unit plans, templates and activity sheets. "What's the Plan, Stan?" also provides information for students and their families featuring Stan the dog and five children who model what to do to be prepared and how to stay safe when a disaster happens.

New Zealand launched the programme in 2006 and, to date, the feedback from teachers and civil defence emergency management staff has been hugely positive. Of the educators surveyed at the end of the first year, 89% found the resource to be useful or very useful. In-depth research is planned for 2011 to better understand how the programme is being used and to identify areas for improvement.

The Washington meeting also provided the Ministry with an opportunity to learn about initiatives being undertaken in the US and explore opportunities for future collaboration. ■

Teams unite in Canterbury response

Response teams provide qualified responders to support CDEM Groups and their communities during an emergency event. Team members work alongside and assist the emergency services and other responding agencies. Following the Canterbury earthquake, many teams from different agencies worked together to assist in the response.

Saturday 4 September, 2010 is a day that many Cantabrians will never forget. An earthquake in the early hours of the morning caused major damage to buildings, infrastructure and land across the central city, the inner residential suburbs and the Selwyn and Waimakariri Districts.

The response to the earthquake involved emergency services, civil defence emergency management centres and personnel, local and regional councils, local and national New Zealand Response Teams (NZ-RTs), Red Cross Response Teams and specialised New Zealand Fire Service urban search and rescue (USAR) task force teams.

Unlike a tsunami or a flood, there was no warning this earthquake was about to happen. This meant that while national response teams mobilised as quickly as possible, for the first day or so after the earthquake, Canterbury used only what resources were available to it regionally.

Those involved in the immediate response needed to be co-ordinated and managed effectively. One of the key aspects of this process was the establishment of close working relationships between the response team and USAR personnel. While NZ-RTs and emergency services dealt with the safety and integrity of a building's exterior, USAR task force personnel focussed on checking building interiors as they are trained in structural collapse and internal rescue.

For the first three days of the response, small integrated teams were deployed into the city and suburbs to undertake building evaluations and safety checks. These teams relayed information back to the City Emergency Operations Centre and regional Emergency Co-Ordination Centre where an overall picture was being developed and situation reports were being compiled.

The command post was initially set up in the Christchurch City Emergency Operations Centre. However, it was moved to the Woolston Fire Station once specialised team communications had been established. Throughout the initial response, NZ-RTs continued to support the USAR task force teams in the removal of chimneys from residential properties.

Above: A typical chimney repair job in Christchurch, in this case, undertaken by NZRT4 team members. Photo, Shane Briggs.

Rescue Manager for the Palmerston North Rescue Emergency Support Team, Shane Briggs, said that the importance of having people in uniform deployed throughout the earthquake zone during the ongoing aftershocks should not be under-estimated.

"A large part of the work was talking to the property owners or tenants, listening to their experiences and reassuring them their property was safe or, if not, ensuring they had somewhere else to live for the meantime. If jobs were simple, like securing chimneys, fixing jammed doors or lifting carpets that were sodden with silt, we would do it. More serious jobs were referred to building inspectors or the task force" said Shane.

Jan Wright, from the Christchurch response team, said: "the atmosphere and camaraderie between

Response team's and task forces deployed during the emergency

- USAR Task Force 1 – Palmerston North
- USAR Task Force 2 – Christchurch
- USAR Task Force 3 – Auckland
- NZRT 1 – RATS (Canterbury)
- NZRT 2 – Nelson
- NZRT 3 – Waitakere
- NZRT 4 – Palmerston North
- NZRT 5 – North Shore
- NZRT10 – Christchurch City Council
- NZRT11 – Christchurch City Council
- NZRT 12 – Waimakariri District Council
- NZRT14 – Christchurch City Council

There were also a number of other response teams deployed within the Canterbury District. These teams came from the following agencies or organisations:

- New Zealand Red Cross
- Response Support Team – Christchurch City Council
- Environment Canterbury in-house Response Team

the task force teams and the response teams was heartening; that we can all work together for the common good and keep our sense of purpose, focus and humour. Personally I wouldn't have missed the whole experience for almost anything."

By day four of the response, local response teams were being reinforced by teams from outside Canterbury. The arrival of additional staff enabled local teams to stand down for much needed rest. This was essential as the response ran from Saturday September 4 until Tuesday September 14.

The local team from the Waimakariri District was deployed within the district a short time after the earthquake struck. The team covered a range of tasks which included door-to-door checks of known vulnerable people, building damage assessments, distributing drinking water, delivering information leaflets, pumping flood water to protect homes, assisting fire service crews with chimney removals and stabilisations and providing staff to the community sector posts, welfare centre and the local operations centre.

Waimakariri Civil Defence Controller, Brennan Wiremu, said the multi-skilled talents of the response teams meant they could be deployed anywhere at anytime for anything.

"Our EOC was comfortable in the knowledge that this skilled team would find problems, fix them and keep us informed with the minimum of risk to their safety as individuals and as a team. This is a luxury that very few organisations, including emergency services, can afford."

Throughout the event the New Zealand Red Cross maintained at least 35 team members on the ground reaching a peak of 61 members. These members were drawn from teams as far away and Invercargill and Auckland.

Team members were involved in the establishment and maintenance of welfare centres. Other activities included checking on more that 100 people within the districts who were medically dependant. Staff also established the welfare registration system, locating 25 people who had been reported missing by relatives.

Red Cross teams assisted a number of diverse

Clockwise from top left: NZRT team member briefing prior to deployment.
New Zealand Red Cross volunteer Robyn Bradley processes newcomers to Linwood College welfare centre in Christchurch.
USAR task force team members working carefully through a badly damaged inner city building.

ethnic groups and refugees who were struggling to understand the CDEM structures and the welfare system within New Zealand.

Volunteers also went with engineers on door to door visits to homes in affected areas. This was to ensure people's welfare and immediate physical needs were addressed along with their need for a building assessment.

Justin Lewis from NZ-RT14, said that the earthquake response was a great chance for response teams and USAR task force personnel to put all the training and dedication of their members into practice and to see how it all fits into the response phase.

"The best learning came for our staff from working with USAR task forces along with teams from around the country. It was also great to know that when local teams are stressed they can call in other teams that are already at the same standard and have been trained before getting them into the field."

Lessons well learnt for the future. ■

Communities looking after communities

When disaster strikes a town, city or region, the first responders are inevitably not emergency services, civil defence staff or trained rescue teams, but members of the immediate community. They are neighbours, family members and existing community networks. To be sure, emergency personnel will be rapidly mobilising to respond but members of the public will almost always have to fend for themselves for the first few hours or even days of a disaster.

It is for this reason national civil defence public education messages emphasise the need for individuals and families to be prepared to look after themselves for at least three days. It is also a major driving force behind the development of community engagement models. However, getting communities to participate in actions that enhance preparedness and create resilience to disasters has proven to be a significant challenge to the civil defence emergency management sector.

In the last issue of *Impact*, we featured the community initiatives developed collaboratively by the Hawke's Bay CDEM Group and the residents of the coastal settlements of Haumoana, Te Awanga and Clifton. In this issue, we look and the work undertaken by Selwyn District Council with members of its community. Emergency Management Manager, **Wilson Brown**, explains the community response model that has been developed over a period of several years.

Background

About six years ago we moved from the traditional model of civil defence sector posts. Instead, we started to work with existing community groups to manage emergencies within their communities. There were two main reasons for this approach. First, the sector post model can be artificial with no natural synergy with the community. In some instances the wrong person is involved so that when emergency events occur, the community gravitates towards recognised leaders or groups rather than those imposed upon them by the model.

Secondly, community groups are involved in their community on a regular basis and they have existing relationships, systems and structures which are easily transferred into an emergency situation.

Rollout of the community model had been reasonably successful although district-wide we noticed that the uptake was dependent on two critical components: a local champion to lead and drive the process; and an awareness and acceptance by the community that emergency events could affect them. For example, areas like Arthur's Pass, being isolated on a fairly regular basis, and communities around the lakes, rivers and the sea with flooding and possible threat from tsunami, understood the need to manage the community response at community level.

Teens mucking to help with the cleanup following the Canterbury earthquake. During an emergency event, it's ordinary members of the public who are invariably first on the scene.
Photos: Diarmuid Toman

Selwyn District residents Doug Oliver, Alan Thorne and Stuart Oliver at a recent community response group planning meeting.

We view communities to include physical locations such as towns, communities of interest such as social groups and communities who support each other such as churches. However, leadership comes from within a recognised community group working in conjunction with a council-sponsored committee to ensure alignment with council objectives and plans. This community-based structure is suitable for an all-hazard, integrated response to disasters and it involves all community groups affected.

There were those within some communities that did not recognise any perceived threats and they were subsequently slow to provide both a local champion and to fully buy into the model. The earthquake on September 4 at 4.35am put paid to this.

We had previously worked with these community groups as part of our pandemic planning and, again, while some seemed to grasp the fact that initially they need to look after themselves, some did not even think it would ever happen. Generally, those who had already understood community threats grasped the potential impact of a pandemic while those who had not, took the opposite stance.

The Kirwee experience

The Kirwee community (about 30km west of Christchurch) fully embraced the community response model. It had a strong local champion and they were deeply affected by their observations of the impacts on communities devastated by the Victorian bush fires a few years earlier.

During the recent Canterbury earthquake they activated their team as per the model and fully responded. Other communities also reacted to varying degrees; the community response model acting as a defacto framework.

The Kirwee community established a group to manage any response to a disaster affecting their community. It appointed a local coordinator and deputy and divided the community into sub areas, appointing sub area coordinators and deputies and establishing a phone tree to communicate within the community.

Each sub area coordinator is responsible for a predefined area and provides the alerting and coordination within their sub area. They subsequently report to the Kirwee Coordinator who then works directly with the Council Emergency Operation Centre (EOC).

The Kirwee Coordinator maintains a phone tree and a list of community resources such as people, skills, and equipment. The group operates out of an Incident Control Point (ICP), currently the fire station, and has the ability to provide support to the community or establish welfare services in the community hall. The Council's EOC links to and liaises with the Kirwee ICP.

While the community response model encourages communities to respond and manage a disaster at community level, they still must work within the Council's civil defence emergency management structure. This includes taking direction from the Local Controller through the EOC, and establishing and managing any community support centres such as welfare centres within the Council's requirements and structures.

A community response group can only carry out tasks they are competent to carry out and must keep the EOC advised of any actions they have undertaken. Support for establishing community response initiatives is provided by the EOC.

One important consideration with this model is defining the geographical areas of responsibility for each community response group. There are a number of possible ways of looking at this and the local group will need to decide which suits them best.

Variations of coverage include: township boundaries; township boundaries extended to cover adjacent residential areas; township boundaries extended to cover adjacent rural areas (which could be based on the predetermined response areas developed by the New Zealand Fire Service); and communities of interest which will also need to agree on areas to be covered.

Working with existing community groups

Within most areas there are existing groups which can support a community response during an event. Expectation is that these groups would carry

While the community response model encourages communities to respond and manage a disaster at community level, they still must work within the Council's civil defence emergency management structure.

out their normal activities but under the overall coordination of the community response group.

A Neighbourhood Support Group, for example, could assist in looking after a number of streets while a church group could assist in welfare and emotional support. The local volunteer fire brigade also plays an important role in responding to requests for assistance or help.

For the model to work, community groups will need to buy into the process and accept that, while not having their roles or responsibilities taken over, they will need to work within the overall community response structure.

Community response process structure

The primary functions of the community response model are to: gather and provide information to assist the overall response; respond to local community issues or concerns; and provide local community welfare support.

The basic structure of a community response team includes a committed community coordinator and deputy, sub area coordinators and deputies, and a good support team. These people will coordinate the community response for their area. It is important that these titles are used consistently across the district.

These staff will require: maps with sub areas marked on them; a callout tree to activate system; communication tools; a list of skills or resources within the community; and a list of persons at risk such as the elderly or those in need of support.

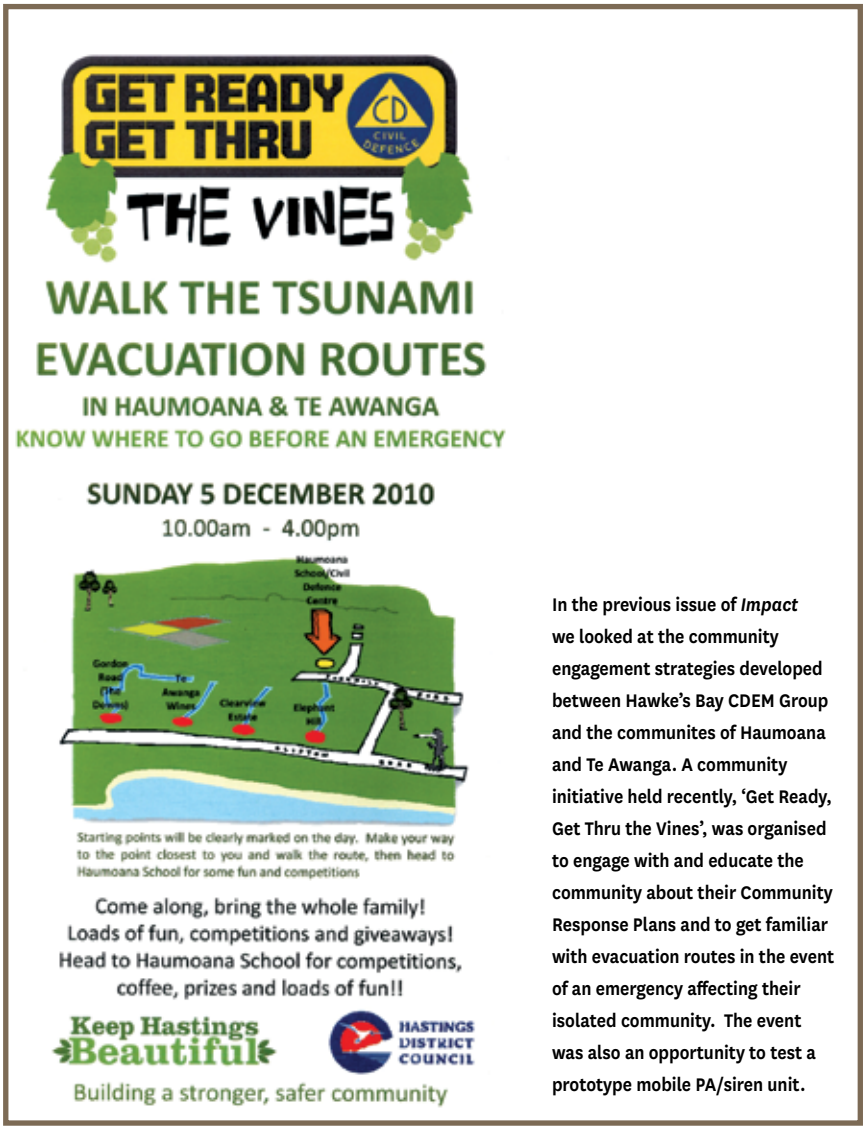
It is necessary to establish a place to meet and manage the response. This place is designated as an Incident Control Point (ICP) and should have, as a minimum, landline communication and Internet access.

Buildings should also be identified that can act as welfare centres to support people who have been evacuated from home or simply require a place to meet to talk or get information. Each welfare centre should have a basic administration kit, staff identification vests and signage. ■

The Ministry has produced several documents to assist CDEM Groups and local authorities in the ongoing process of building community resilience. These include:

- *Community Engagement in the CDEM Context [BPG 04/10];*
- *Welfare in an Emergency [DGL 11/10]; and*
- *Mass Evacuation Planning [DGL 07/08].*

These are all available for download on the Ministry's website. Hard copies are also available from the Ministry's Wellington office.



In the previous issue of *Impact* we looked at the community engagement strategies developed between Hawke's Bay CDEM Group and the communites of Haumoana and Te Awanga. A community initiative held recently, 'Get Ready, Get Thru the Vines', was organised to engage with and educate the community about their Community Response Plans and to get familiar with evacuation routes in the event of an emergency affecting their isolated community. The event was also an opportunity to test a prototype mobile PA/siren unit.

Tsunami exercise a success

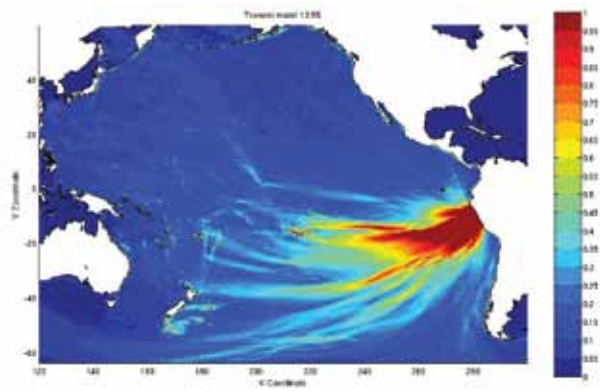
Exercise Tangaroa, held on Wednesday 20 October 2010, was a national, multi-agency exercise focusing on the national response to a distant source tsunami event. The exercise was led by the Ministry of Civil Defence & Emergency Management, with participation from the 16 CDEM Groups, central government departments, emergency services, lifeline utilities, and other agencies across the country. In all, more than 100 agencies and companies took part, making it one of the largest civil defence emergency management exercises ever held in New Zealand.

Scenario
The scenario for the exercise was based on a magnitude 9.1 earthquake off the coast of Central Peru in South America and focused on the lead-up to a tsunami arrival, stopping when the first waves reached the New Zealand coast.

The exercise was played in real time, with the first notification of the earthquake (and the start of the exercise) at 4:59 am. The exercise finished at 7.05pm the same day.

Exercise play
Information about a simulated destructive tsunami crossing the Pacific was communicated through simulated tsunami, earthquake and sea-level information bulletins issued (notionally) by the Pacific Tsunami Warning Centre (PTWC), the United States Geological Survey (USGS) and the Nation Oceanic and Atmospheric Administration's National Data Buoy Centre (NOAA NDBC). These were sent to MCDEM as the national Tsunami Warning Focal Point (TWFP) and to other agencies that normally subscribe to PTWC bulletins.

Decision-making and notification down to the last stage before notifying the public within New Zealand was exercised. MCDEM analysed the simulated PTWC information with the support of the Tsunami Experts Panel, a science group coordinated by GNS Science, and subsequently issued national advisory and warning messages. The participating national and regional agencies responded to this information by considering appropriate warning and response at their levels. This resulted in local warnings, evacuations and welfare support within affected areas, most of them notional, but used as the basis for exercising response staff.



Expected maximum wave amplitudes (m) in deep water for the Exercise Tangaroa tsunami calculated using COMCOT tsunami propagation software.

Threat estimates
Threat level estimates for 43 coastal zones along the New Zealand coastline were introduced during Exercise Tangaroa. These estimates were displayed on a map and are the result of significant modelling conducted by GNS Science (funded by MCDEM) over the last year. The maps were prepared by GNS Science and attached to MCDEM hourly updates. The threat level estimates are based on the expected maximum wave amplitude at shore at any point within each zone. This worked well as the first estimates could be distributed within the first two

Left: New Zealand Police and Defence Force staff in the National Crisis Management Centre during the exercise. More than 100 agencies were involved.

hours, allowing decision-makers at the regional and local level to assess the risk to their communities, and take appropriate steps. GeoNet applied further modelling to refine the estimates over the next hours and although they did not require significant adjustment, the maps were updated accordingly to provide the best possible indication of threat.

Consequences and Impacts

With the intensification of coastal development in New Zealand in the past few decades, a large tsunami today is likely to be highly damaging. In the exercise scenario, damaging waves could be expected along the entire east coast of New Zealand from Northland to Stewart Island, with some west coast areas also affected. It would destroy buildings, affect essential lifelines utilities and block roads. Many people would need to be evacuated and significant economic, political and social issues would follow. The result aimed for by the CDEM response agencies is for all people in areas vulnerable to the tsunami to be evacuated prior to the first waves arriving. With the more than 14hours warning given and prompt action by response agencies, it is believed that there would be few casualties in this event despite the wide area affected.

The impacts of a tsunami depend on the height and run up. Several factors contribute to tsunami damage and casualties. Fast flowing water hits structures, vessels and people, and can erode the

Impact figures from CDEM Group reports

Note: There are likely to be impacts in other locations, however, this is all that was reported to NCMC during and after Exercise Tangaroa.

EVACUATIONS

c280,000 people across New Zealand

NATIONALLY SIGNIFICANT DAMAGE

- Marsden Point Oil Refinery (direct impact and power outages)
- Tauranga Port (exports)
- Port Taharoa (iron sands exports)
- Tiwai Aluminium Smelter (aluminium exports)
- Road network (particularly Bay of Plenty, Hawke's Bay, Wellington, Canterbury, Otago and West Coast).
- Rail network (particularly Bay of Plenty, Hawke's Bay, Canterbury, Otago and West Coast)

CITIES AND TOWNS SIGNIFICANTLY AFFECTED

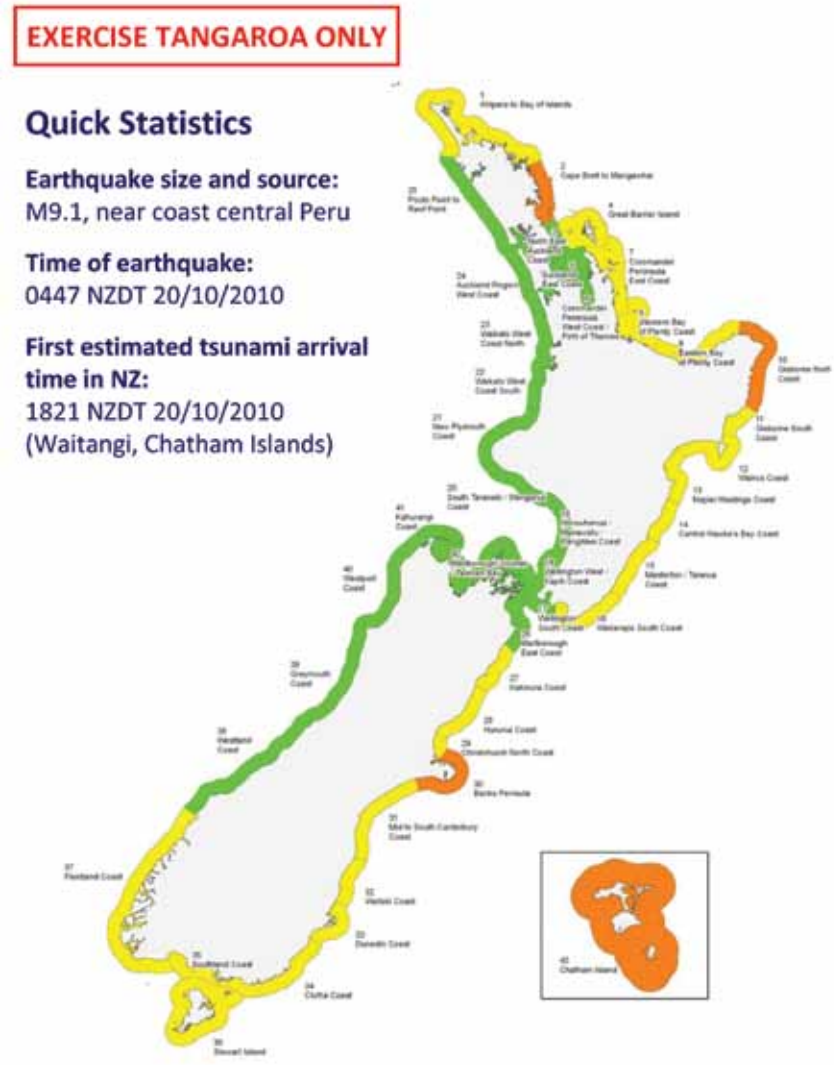
Whangarei
Tauranga
Wellington
Christchurch
Bluff
Stewart Island
Auckland (eastern)
Whanganui
Kaikoura
Oamaru
Invercargill

LIFELINES IMPLICATIONS

- Power outages in Northland, Taranaki, Nelson Tasman,
- Sewerage impacts across New Zealand
- Fuel distribution system (direct damage to facilities and Marsden Point outage)
- Port facilities damaged (particularly Northland, Tauranga, Gisborne, Napier, Chatham Islands, Lyttelton, Bluff and Stewart Island)
- Airport facilities damaged (Napier, Whanganui, Wellington, Greymouth, Chatham Islands, Invercargill)

Civil Defence staff out and about talking to locals and tourists in the Waitakere area. Photo courtesy of Auckland City Council

Wellington City Council Emergency Management staff testing tsunami sirens. Photo courtesy of Wellington City Council.



Above: The final tsunami threat level map distributed during Exercise Tangaroa. The exercise was an opportunity to apply recently-developed capability to provide threat level estimates. These estimates aim to provide a more meaningful indication of likely wave amplitude at the shore to assist local authorities assess risk for their community.

land. The out-rush of water when a tsunami wave recedes often is the main cause of drowning as people are swept out to sea.

Considerable amounts of debris are picked up in tsunami waves, which damage structures and injure people on both the incoming and outgoing waves. Fire and contamination are also common if fuel installations are damaged and hazardous substances and sewerage are released into the water. Ponding of saltwater over large areas can cause damage to building electrical systems and destroys pastures and crops.

A tsunami generated from South America would generally reach New Zealand approximately 14 hours after the initial earthquake.

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The threat level estimates are based on the expected maximum wave amplitude at shore at any point within each zone. This worked well as the first estimates could be distributed within the first two hours, allowing decision-makers at the regional and local level to assess the risk to their communities, and take appropriate steps. GNS Science applied further modelling to refine the estimates over the next hours and although they did not require significant adjustment, the maps were updated accordingly to provide the best possible indication of threat.

IMPORTANT NOTES:

1. The stated threat levels may apply to any one of the series of waves generated by the event and not necessarily to the first wave. The first wave is not always the largest or highest and waves are likely to continue for many hours.
2. The threat levels suggest the largest wave at any coastal point inside the zone. Wave heights will vary within a zone.
3. The amplitudes do not include the tidal state (sea level) at the time the wave reaches the shore.
4. The estimate is for the maximum expected wave amplitude at shore. Run-up can be up to twice as high on steep slopes onshore near the coast, i.e. a wave measuring 5m at shore can run up as high as 10m on-land near the shore.
5. The colours used to illustrate threat levels do not relate to the colours used for evacuation zones (red, orange, yellow – see *Tsunami Evacuation Zones DGL08/08*, MCDEM).
6. The expected wave amplitudes (crest to sea level) at the shore are likely to be different to measurements given in PTWC bulletins. PTWC measurements are taken at sea level gauges in the open ocean or at coastal points off-shore from New Zealand. MCDEM information represents the official threat estimates.

Maximum expected amplitude at shore		Threat definition
	<20cm	No threat
	20cm-1m	Threat to beach, harbours, estuaries & small boats
	1m-3m	Minor land threat
	3m-5m	Moderate land threat
	5m-8m	High land threat
	8m+	Severe land threat

Results

Overall, the exercise was a success. The national warning system messages were broadcast in a timely manner, CDEM Groups and territorial authorities responded quickly and appropriately, and a lot of useful information was gained. The evaluation process will continue until April next year, when the Exercise Report is expected to be completed. The next national level exercise is Exercise Shakeout, scheduled for late 2012.

Contacts

If you have any questions about the exercise please contact: Jo Guard on (04) 495 6818, jo.guard@dia.govt.nz or Tane Woodley on (04) 495 6827, tane.woodley@dia.govt.nz. ■

CDEM international engagement programme

New Zealand enjoys mutually beneficial relationships with many countries that are also striving to build resilient communities. CDEM Special Services Manager Sarah Stuart-Black describes some of the recent changes to the management of our international relationships.

Above: The approach to one of several villages destroyed by tsunami waves in Samoa in 2009. The New Zealand Government responded in a variety of ways to assist in the recovery process.

Civil defence emergency management in New Zealand has benefited enormously from international interactions and engagement over the years. Opportunities to discuss issues, share lessons, participate in conferences, exercises and professional development, as well as to support emergency response and recovery activities in other countries is all part of New Zealand being a 'good global citizen' when it comes to disaster risk management.

As a small country with limited resources, we also recognise that in a large scale emergency New Zealand may need to call upon international assistance to support our response and recovery efforts.

Disaster risk management is the term used in the international context to encompass the 4Rs (as we know them) but more commonly referred to internationally as disaster risk reduction (which incorporates risk reduction and readiness) and disaster management (which incorporates response and recovery).

As part of an all-of-government approach to New Zealand's international engagement, MCDEM provides the disaster risk management contribution in support of the Ministry of Foreign Affairs and Trade, which is the Government's lead adviser and negotiator on foreign and trade policy, development policy and assistance, and diplomatic and consular issues. The diagram opposite demonstrates how MCDEM and the Ministry of Foreign Affairs and Trade have complementary outcomes for the international work performed by MCDEM.

To bring together all the different activities and interactions MCDEM has internationally on disaster risk management, in 2008, the Ministry developed a CDEM International Engagement Strategy with three objectives:

Objective 1: To ensure that New Zealand's response capability is supported by access to international assistance following a large emergency event;

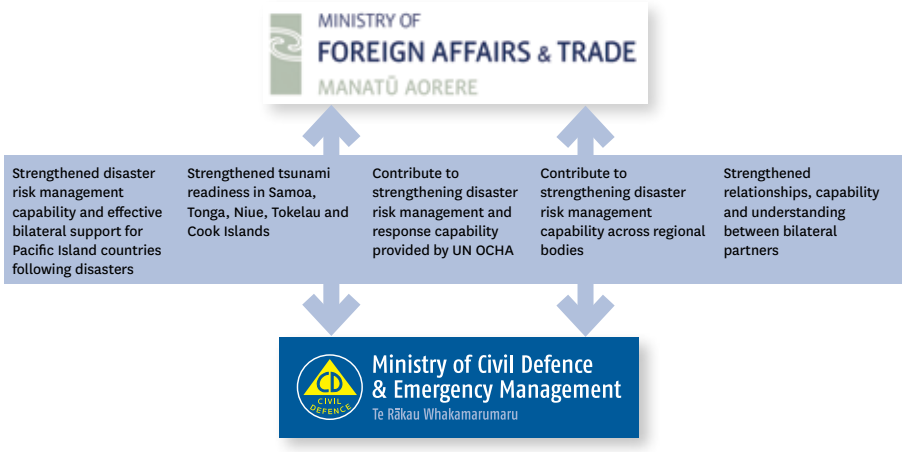
Objective 2: To fulfil New Zealand's international obligation to be a good 'global citizen' through response operations, capability development and the provision of international assistance; and

Objective 3: To increase New Zealand's domestic resilience and CDEM capability through increased CDEM knowledge.

The CDEM International Engagement Programme involves a range of activities with different stakeholders and organisations to strengthen disaster risk management. To enable MCDEM to contribute effectively to these activities, the CDEM International Engagement Programme is divided into a number of streams of activities.

Examples of activities include:

- New Zealand United Nations Disaster Assessment & Coordination (UNDAC) members being mobilised to support a country affected by a large scale disaster;
- providing policy advice and support to the Ministry of Foreign Affairs and Trade on disaster risk management issues;



MCDEM and the Ministry of Foreign Affairs and Trade have complementary outcomes for international work

- supporting Niue, Samoa, Cook Islands, Tokelau and Tonga to develop National Action Plans;
- participating in regional workshops with other Pacific countries; and
- strengthening tsunami risk management arrangements as part of the International Oceanographic Commission and Pacific Tsunami Warning System.

In October 2010, MCDEM and the Ministry of Foreign Affairs and Trade signed a revised Memorandum of Understanding (MOU).

The new MOU is for three years from 2010 until 2013 and incorporates new expectations of the MCDEM contribution to New Zealand's disaster risk management support for the Pacific as well as the continued contributions to bilateral interactions and United Nations support.

The MOU includes additional funding for a new three year fixed term role with MCDEM to coordinate the CDEM International Engagement Programme and funding to strengthen tsunami risk management across the five Pacific Island countries MCDEM works closely with, namely Niue, Cook Islands, Samoa, Tonga and Tokelau.

MCDEM is currently reviewing the streams of work within the CDEM International Engagement Programme to take account of the revised MOU and we are delighted to announce that Justin Kemp, currently from the Council for International Development, will be joining MCDEM in mid January as the CDEM International Engagement Programme Coordinator. More information about his role and key responsibilities will be provided through the February 2011 E-Bulletin.

MCDEM will provide updates on development of and implementation of the CDEM International Engagement programme through E-Bulletin. For further information, please contact sarah.stuart-black@dia.govt.nz. ■

Napier prepared to "live to tell the tale"

Napier people are more prepared than ever to get through a civil emergency after recently attending a Napier civil defence open day with the theme "Live to tell the tale".

Almost 600 people visited the Napier War Memorial Conference Centre to learn about all things civil defence from what to put in an emergency survival kit and how much water you need to survive for three days, to finding out interesting facts about natural disasters and signing up to be a civil defence volunteer.

Napier Civil Defence Manager, Angela Reade, says she is thrilled with the result of the inaugural event and has been inundated with positive feedback from the community.

"People filled out a survey at the open day and the majority of people would like to see it become an annual event," Angela says. "It is great that the community is taking responsibility for themselves and learning how to 'get ready and get thru'. That is what the open day was all about."

Napier representatives from the Deaf Association also had a good response from the deaf community who attended to find out how emergency text alerts and a civil defence DVD produced in sign language can help them prepare and get through.

Napier City Council web developer, Lee Tong, was at the open day helping people sign up for emergency text alerts. Despite a few hiccups caused by a new version of Twitter, which is the vehicle used for distributing the text alerts, Lee says he was pleased to see so many people make use of the additional service.

Left to right: Odell Morland, Kenny Parker, the mascot from Kennedy Park Top 10, Angela Reade, Sir Fin from the National Aquarium of New Zealand and Paula Nagie.

Napier City Council mascots, Kenny Parker from Kennedy Park Top 10, Sir Fin from the National Aquarium, Seamore the Seagull from Par 2 Golf and Waste Weka the recycling guru were a hit with kids as were Hawke's Bay Magpies team members Josh Keys, Hika Elliot and Leighton Price who signed autographs and gave out prizes during the day.

The open day was supported by many agencies including volunteers from civil defence and Napier City Council, Napier Fire Service, Deaf Association, Salvation Army, Hawke's Bay CDEM Group, National Aquarium, Par 2 Golf, Café Nero, Mad Butcher, Napier City Pak 'n Save, Quality Bakers, Hawke's Bay Magpies, More FM and Classic Hits.

"This open day was the epitome of a community event. It is what community spirit is all about and it's humbling that so many people were willing to help" says an extremely grateful Angela Reade. ■

Pakistan floods simply overwhelming

"Nothing – just nothing – can prepare you for an emergency the sheer size of the Pakistan floods", says expat Kiwi, UNICEF's chief of advocacy and communications in Pakistan, Kristen Elsby. It has been months since flooding devastated much of Pakistan, and agencies involved in the recovery process are struggling to cope with the enormity of the disaster.

"The scale of the emergency is simply overwhelming. The size of the area under the floods is about three quarters the size of New Zealand," she says.

To get an idea of the response, UNICEF has been supplying clean drinking water to over 2.8 million people every day and more than 1.5 million people have been provided with sanitation facilities. The Pakistan floods could be described as a 'Black Swan' event, like the 2007 financial melt down or the Canterbury earthquake – all were unpredictable.

Pakistan authorities expect regular flooding from the annual monsoons – and some flooding actually returns nutrients to the soil. But the recent floods, like the Canterbury earthquake, were out of the blue. "The sheer volume of water with rain continuing for over a six to eight week period, just overwhelmed the country," says Kristen.

The flooding was exacerbated by a recent drought, which dried out the ground, making it hard to absorb water. After the floods came, the rain continued for six weeks. "It was literally a perfect storm, for which it was difficult to prepare."

But the regions that were better prepared for a large-scale disaster were the ones that had experienced disasters before, such as the the Khyber Pakhtunkhwa province that was affected by the internally displaced person crisis in 2009, where over a million people were displaced by a massive attack on the Taleban.

"There was a difference in the speed of the response, depending on the province's experience," says Kristen.

Months after the event, not everyone has returned. In the Sindh province, only 20% to 30% of people are back, although in other provinces, most people have returned to what's left of their homes.

UNICEF will remain in Pakistan for years. Kristen notes UNICEF has already been in the country for more than sixty years and nearly doubled its staff to 550 after the flood. UNICEF in Pakistan will probably remain in emergency mode for 12 months at the very least – and international staff that leave will be replaced with local people.

That's so long as there is sufficient money – for currently the UNICEF Pakistan emergency response is underfunded by more than 40%. Projected needs are $US251m, well beyond the $US150 received. What would happen if that extra money is not raised? "We would simply be unable to respond to the urgent needs of children and women in Pakistan," she says.

And as people return home, they will still need assistance, possibly at greater cost than for existing programmes. Most people in the flood-devastated areas had mud brick houses – many now just mud.

Continuing to help these huge numbers people is actually more difficult than when they were housed in camps. In the North, where the weather has turned cold, UNICEF is now distributing basic necessities like blankets. And if there is another big one? "Everyone will have more capacity and experience to respond," she says. ■

Top: An aerial view of Muzaffargarh district, Punjab province, which was seriously affected during the record monsoon floods between July and September 2010.
Above: Children and men fetch clean drinking water supplied by UNICEF at a temporary relief camp in Jamshoro, Sindh province.
Photos: ©UNICEF Pakistan/2010/Elsby

North Island CDEM conference

Whangarei, 23–24 November

The 2010 North Island CDEM Conference was hosted by Northland CDEM Group at Forum North in Whangarei this year with more than 130 people from a variety of agencies attending.

The conference commenced on November 23 with a field trip to the New Zealand Refinery at Marsden Point, New Zealand's major supplier to the oil industry. A briefing at the visitors centre and a drive around the plant provided an overview of the operations and scale of the plant.

That afternoon conference delegates were welcomed by the Chair of the Northland Regional Council, Councillor Craig Brown. The opening address was by Fire Commander, Allan Kerrisk, from the NZ Fire Service and Northland's NZFS CEG representative.

Jo Guard, from the Ministry of Civil Defence and Emergency Management, then discussed the Samoa tsunami. Jo provided an interesting overview of the challenges she faced during her deployment to assist with the local response.

Other speakers included Graham Leonard from GNS Science, who provided an overview of the volcanic fields in the North Island; Di Sinclair from Taupo Bay and Margaret Mitchell from Ruakaka both gave interesting accounts of developing community response plans. The first day's sessions concluded with an address from John Hamilton the Director, Civil Defence Emergency Management.

Day two of the conference was opened by Steve Warrington from the Victorian Country Fire Authority. Steve is the Deputy Chief Fire Officer in Victoria and was involved in the operational response to the Victorian bush fires in 2009.

He provided a frank and passionate account of the post-fire enquires and the ongoing issues associated with implementation of mitigation measures. Steve's presentation brought home the need for rigorous readiness and response arrangements at community and organisational levels. He also provided a valuable insight into the blame and community reaction to the fires following the deaths.

Other speakers included Rob McDowall, who discussed urban search and rescue, Lisa Roberts discussed work carried out by the Northland Lifelines Group, Peter Gubb explained fuel supply contingency plans, Langley Cavers shared monitoring and evaluation lessons learnt by the Waikato region and Kim Wright from GNS Science and Andy Downes from MetService explained short fuse weather warnings.

Left to right: Conference Organisation Committee Bill Hutchinson CDO FNDC, Greg Gallop MCDEM, Antoinette Mitchell CDO Whangarei DC, Graeme MacDonald EMO Northland Regional Council.

A range of sponsors and exhibitors were also present throughout the conference which contributed to a very successful conference.

The Host for 2011 North Island Conference will be Auckland. ■

South Island CDEM Conference

Dunedin, November 9–11

This year's South Island conference attracted more than 50 participants to Dunedin for a programme themed around exploring emergency operations centre functions.

After an opening by Mayor Dave Cull, keynote speaker, anthropologist Michael Henderson, spoke on the six facets of a high performing organisation and the importance of culture in organisational performance.

Canterbury CDEM staff presented their perspectives on the Darfield earthquake and how their emergency operations centres and CIMS functioned in a real event. The common theme seemed to be that planning and training based on SOPs and other procedures paid off but don't expect SOPs to be consulted or strictly adhered to during an event.

Participants looked at a range of mobile emergency operations centres set up in the Octagon **(picture above)**, and there were demonstrations by developers and suppliers of a number of systems that might have application in an emergency operations centre.

Jason Dawson, from Northland Regional Council, gave a stimulating presentation on the social media and offered advice in the subsequent workshop that investigated how social media could be utilised by CDEM and issues that need to be considered.

A presentation on the new Emergency Management Information System (EMIS) and a workshop to consider how it could be integrated into operational procedures raised a lot of questions and issues that will need to be addressed once EMIS is rolled out. This workshop identified a need for specific EMIS workshops and consultation for all local authorities. It was interesting to learn that other areas of central government have also been evaluating the system for their emergency functions.

The combination of presentations and workshops and the mix of local authority personnel and those from partner civil defence emergency management agencies seemed to be a successful formula. ■