

**Developing Community Weather-safe Structures and Behaviour. Research Series Report 2**

# **Improving Delivery of Safety-oriented Weather Information for Non-English Speaking Households (NESH)**

**Fire weather as an example**



**Fire Flood Cyclone  
Storm surge Hail Wind**

**Australian Centre for Disaster Studies, for the Bureau of Meteorology, multicultural and disaster management organisations, the media and communities, to maximise the effectiveness of safety weather warnings and responses.**

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**To web Feb 2008**

## Contents

Section	Topic	Page
	Executive summary	4
2	Introduction	9
3	Full study - aims and methods	11
4	National immigrant composition	12
5	Learning of the issues – pilot and early research	16
6	Threat information and detailed safety instructions	23
6.1	Web-based household bushfire advice (provided separately)	
7	Collated recommendations - web based and phone trees	30
7.1	Web-based information packs, simulations and real-time threat status	30
7.2	Phone trees	32
8	Theoretical underpinnings of information content: Definitions, language, cognition and behaviour.	34
8.1	Language and symbols	35
9	Risk communication	49
10	Discussion	64
11	Conclusions	68
12	Further reading	69

Thanks to AP David King, JCU Centre for Disaster Studies, Linda Anderson Berry, Bureau of Meteorology, my liaison persons in Queensland and Victoria, the willing help of MCO personnel, the Community Leaders and many NESH participants in the 18 meetings held to mould and test this sustainability implementation research.

<b>Appendices</b>		
1	Notes from a Townsville pilot study on weather warnings for NESH	73
2	Notes from Bowen NESH meeting Weather Warning Project Bowen 18, 19 November 2004	81
3	Notes from MCO, Cairns Result of meetings in Cairns 24-25 November 2004	89
4	Note on Brisbane MCO meetings	94
5	Notes from NESH weather warnings in Victoria	99
6	NESH meeting fliers	109
7	NESH notes Brisbane June 2005	110
8	Notes NESH focus group meetings Melbourne June 2005	113
9	Funding submissions to EMA for web NESH 'Dangerous Weather' portal, TV-ready flood simulation and 'dither and die' game development.	117

<b>Attachments</b>	<b>Appendix 9 details</b>	
1	Dr Douglas Goudie profile	124
2	Video production costs	125
3	SBS budget overview	126
4	Draft phone tree model	127
5	Submitted EMA funding Applications	128

## Tables and figures

<b>Tables</b>		
1	Settler arrivals by birthplace 2005	12
2	Settler arrivals 1983 - 2004	14
9.1	Rohrmann's components of the Risk Communication process	51
9.2	Rohrmann's main components of the Risk Communication process	52
<b>Figures</b>		
1	Settler arrivals by region of birth 2002/03	13
2	Settler arrivals by region of birth 2004/05	13
3	NESH disaster warning mobile phone tree model	33
8.1	Signs for life	38
8.2	Stern's 1995 behavioural explanation model	41
8.3	Possible determinants of activity patterns	44
8.4	A graphic how-to of social marketing	48
9.1	Rohrmann's Risk Communication model – process framework	55
9.2	Rohrmann's 'Informing about the risks from hazards: A framework for the information behaviour link'	56
10.1	Nearly crossing a flooded road – Tully NQ 2004	66

## Executive Summary

*All Australians have a right to safety.* EMA, 2000 a, p. 4.

This national research report provides rationale and recommendations to ensure Non-English Speaking Households (NESH) know and understand the realities of any possible extreme weather impacts on where they live in Australia. Enacting the recommendations will ensure NESH are structurally prepared for such impacts and are keen to take precautionary actions to maximise their own and their community member's safety. A further advantage of developing and fully promoting one multilingual 'Australian dangerous weather' web site covering fire, flood, and destructive winds; searchable by location, language and threat is that the site will provide information and real-time threat details, of benefit to all Australians in threat zones.

The media is often ignored by those who cannot understand English, so the recommendation to develop a 'NESH safety-oriented phone tree' is necessary to ensure threatened and often socially isolated NESH actually hear of looming impacts in their area.

This final report on more effective risk communication to NESH results from an 18 month post-doctoral study undertaken by the Centre for Disaster Studies (CDS), jointly funded by the Australian Research Council and the Australian Bureau of Meteorology (the Bureau). There were seven eastern state study locations, involved groups from 14 Multi Cultural Organisations (MCOs), representing many thousand NESH.

The study showed diverse cultural and language barriers for many recent settlers in understanding Australian disaster impact threats, and how to maximise family safety if a threat approaches. The recommendations were developed with and supported by MCOs.

### Lead recommendation

Develop a National Non English Speaking Households (NESH) Safety Group, lead by the Federal Government's Department of Immigration and Multicultural and Indigenous Affairs, responsible for NESH migration into Australia. With DIMIA or its replacement, this peak body should include the Bureau, Emergency Management Australia (EMA), police; TAFE, state education departments focused on English as a Second Language (ESL), national MCOs, with representative local MCOs, multicultural media and disaster management groups.

This peak body will develop, exhaustively advertise and promote a 'dangerous weather' portal in EMA's Australian Disasters Information Network (AusDIN) web site<sup>1</sup>, or the Bureau's web site<sup>2</sup>, with prominent links to all related MCO

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<sup>1</sup> <http://www.ausdin.gov.au>

<sup>2</sup> <http://www.bom.gov.au/>

sites, to inform MCOs, multicultural community leaders and all NESH of location-specific Australian hazards, in the many languages of recent arrivals. This information will make clear, in plain English and translation, the risks of each likely geographic and temporal hazard distribution. The web-based information will also use abstracted graphics; along with stark, preferably local photographs; to reinforce that the threat is real, and how to maximise safety in a precautionary, self-help manner. During any threat build-up, links to real-time information and graphic depictions of the threats, and safety-oriented behaviour will be prominent.

The first CDS research project into developing community weather-safe structures and behaviour was conducted with the Bureau, and focused on remote Indigenous communities. This report is a companion to the Indigenous weather warnings report<sup>3</sup>.

Whilst the Indigenous weather warning study found robust and improving warning mechanisms and communities with a deep ability to 'read' the Australian weather, the NESH study produced results and recommendations requiring broader national cooperation and engagement of the emergency management sector, police and Australian multicultural organisations. This will ensure that NESH understand the local risks, are keen to act to maximise their safety and receive safety weather warnings in a timely manner. This web-based information will be widely known and downloaded by TAFE, English as a second language schools and MCOs in appropriate languages, to explore local risks and safety-oriented preparations, warnings and precautionary responses with recently arrived NESH members.

A bonus outcome of implementing the core recommendation is that all Australians and tourists, in any hazard threat, will know easily where to get real-time web information, and what to do. In March 2006, CDS post-impact research on Cyclone Larry found many local residents in the Innisfail area had difficulty finding real-time information on the Category 5 cyclone bearing directly toward them.

Many recent arrivals have no cultural experience of the more extreme natural threats in the Australian landscape. People from the Sudan, for instance, have little or no experience of bushfires. The nature and extreme threat of a category four cyclone, or a bushfire, is without any collective knowledge or experience of recent immigrants from places like Indonesia or many parts of Africa.

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<sup>3</sup> [http://www.tesag.jcu.edu.au/CDS/reports/Gou\\_IWWRpt/index.shtml](http://www.tesag.jcu.edu.au/CDS/reports/Gou_IWWRpt/index.shtml)

## **TAFE has a place**

Many recent immigrants need an education program which has to assume no individual or collective knowledge of major Australian natural threats: bushfire weather, extreme winds, major floods, cyclone and storm tides. This information should be blended into the compulsory NESH TAFE English lessons.

## **NESH households have mobile phones for a warning phone tree**

Media delivery of impending impacts does not work for NESH. They tend not to have mainstream media exposure. It is in an incomprehensible language. It is largely meaningless.

The research found that practically all NESH or close social groups have at least one mobile phone. This has generated a strong recommendation to develop formal, disaster-manger down warning telephone trees; starting when the Bureau issues an extreme weather warning which may impact on NESH; through police in a disaster management group. They will promptly contact all local MCOs. They in turn will inform community leaders in threatened areas of an approaching impact. Community leaders, via mobile phone trees, will then inform each of the NESH in their extended group of an impending natural disaster impact, and how to maximise their safety.

## **The web - making possible impact threats 'real'**

Because of the lack of collective experience of, and knowledge about the major weather impact risks in Australia, and because of profound language barriers, information sheets about the hazards, and behaviour to maximise safety should be translated into the languages of recent non-English-speaking immigrants.

These information sheets should be posted on to a special NESH web site, easily accessed from the Bureau's (or other agent's) web site, so MCOs can download the information in the languages used by people under their care. There already exists, for instance, fire weather sheets in 27 languages generated by the NSW fire service, but with few links into other disaster locations<sup>4</sup>. Material like this downloadable information needs to be made known to all MCOs, to get the right understandings of threat, likely impact and personal, safety-maximising responses to the locally vulnerable.

By conducting a web search for 'Ausdin'<sup>5</sup>, a very informative set of threat descriptions and safety maximisation behaviour is given. Equally, much good information can be found on the Bureau and other sites.

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<sup>4</sup> <http://www.fire.nsw.gov.au/community/factsheets/translated/index.php>

<sup>5</sup> <http://www.ema.gov.au/agd/ema/emainternet.nsf/Page/RWP19353533747CB74ACA256F01002468DA> [via: community information/publications].

## **Problems with web-accessed information**

The problems with web-accessed information are as follows:

- who knows of the AusDIN site;
- who translates, into which NESH languages;
- which national body undertakes to let all MCOs know, and become familiar with that AusDIN site, and areas within the Bureau site, and, for instance, bushfire specific sites, so local NESH properly understand the local threats (if any), are informed when an impact looms, and are motivated to undertake their own-safety-oriented behaviour.

Feedback from the many working and focus groups of recent NESH immigrants in Townsville, Cairns, Bowen, Brisbane and Melbourne regions supported recommendations for a phone tree; and to have known web-based fact sheets, and further encourage any such information sheets to contain a high level of graphic images. It is recommended that such sheets contain drawn images and photographs of recent extreme events within Australia.

As disaster management risk communicators aspiring to safe, sustainable communities, or organisations responsible for NESH, having good information 'somewhere' will be of no consolation if any NESH get harmed in a natural disaster impact. Hence the importance of the right information, delivered in the right language, by the right (trusted) people, with the right graphics.

The purpose of this document is to make clear to national decision makers that this is a worthy task for EMA, for the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) or replacement, for the Bureau, TAFE and schools; for peak national MCOs (including multicultural media) and state, territory, regional and local government disaster management organisations. In this era of information overload, getting the core recommendations to these Agencies is difficult enough. Getting Agencies, then NESH to act requires clarification as to whose responsibility information development and dissemination to NESH may be.

It is recommended an all-of-government partnership with MCO peak national bodies is developed to oversee information development, translation and thorough dissemination of the information's web location and languages available. If this strategy has support, the ultimate issue is: which body will take responsibility to develop this coalition? DIMIA<sup>6</sup> seems the logical lead agency.

## **Core "social good" research outcomes**

### **Create a National NESH Safety Group to develop the recommendations**

This research set out to learn how to maximise NESH safety in an extreme weather threat zone. To achieve that, it is recommended that simple web-

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<sup>6</sup> Note: DIMIA has since been disbanded. See now <http://www.immi.gov.au/> Dept of Immigration and Citizenship.

based multilingual fact sheets provide an understanding of, and action-oriented instruction sheets for MCO and TAFE download and use.

The proposed NESH peak safety group will need to decide which organisation refines the content of the fact sheets, and on which thoroughly advertised web portal they will be available. To ensure NESH hear of a likely impending local impact, the peak group will need to ensure NESH are legislatively defined as a 'special needs group' so that disaster managers activate a funded, MCO-linked warning phone tree. Finally, to help ensure NESH understand local Australian natural hazards and how to maximise family safety: TAFE and ESL schools are the logical bodies to provide an ESL module on Australian safety to NESH members, collaborating with the national NESH safety group. This approach will need to be ratified by the Community Safety Working Group or the Police Ministers Group set up by the Council of Australian Governments (COAG) in 2004 to mitigate disaster impacts.

Within my current role as Senior Researcher, Australian Bushfire CRC, focused on effective bushfire risk communication and emergency warnings, I will welcome the opportunity to help guide implementation of these recommendations, piloted with a focus on bushfire risk awareness, preparedness, precautionary decisions and actions to stay and defend, or prepare and leave. What will focus the NESH community on the above issues will provide clear, easily accessed information, instruction and benefit for all people in Australian hazard zones.

With climate change and increased urban fringe development, it will only become more important that bushfire and other dangerous weather information details are delivered through one well-known web site. This will become the core part of evolving weather safety structures and behaviour, focusing the sourcing of safety-oriented weather information to local hazard zones and local residents, managers and emergency minimisation groups, along with national and local media. That site will deliver clear, location-based knowledge of Australia's weather threats in many languages; underline an acceptance of the reality of possible local threats, delivering timely and instructive warnings; real-time information, images, forecasts and simulations; and a philosophy of precautionary self-help.

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For the Australian Bureau of Meteorology



## Section 2 Introduction

This report records the research process and recommendations, with supporting appendices, detailing ways to maximise safety of NESH facing a natural disaster.

Thanks are extended to the 100 MCO members and many recent immigrants who gave willingly of their time and experiences; Bureau staff and Centre for Disaster Studies personnel who helped make this study comprehensive and meaningful as socially beneficial, sustainability-focused research.

A description of study aims, methods and results of the scoping study of NESH in north Queensland leads to an outline of the full study with 14 MCOs. Early in the report, a list of problem words from the Indigenous weather warnings study is presented. Many of the Indigenous-identified problem words also resonated as linguistically or conceptually difficult for NESH. For instance “severe” is culturally repugnant to many Indigenous Australians and difficult for Sudanese people who were asked.

The genesis of the recommendations on a national approach to maximising NESH safety ahead of a natural disaster impact is detailed, and then discussion supporting those recommendations is presented. The Bureau is such a core component of any way forward in NESH weather safety because, as well as being the weather information gatherer, forecaster and disseminator, “The Bureau of Meteorology is responsible for providing the Australian community with warnings of dangerous weather, in order to minimise damage and injury.”<sup>7</sup>

Using bushfires as a detailed hazard example to present an effective national approach to hazard awareness and accessible warnings, this report concludes with considerations of the wider implications of this social benefit research. The appendices provide detailed notes of all meetings held, and funding submissions made to EMA to progress some of the recommendations.

Like the Indigenous weather warning recommendations, the NESH recommendations; whilst serving more marginalised Australians in risk communication, will provide a more accessible and information-rich base that will help in safety-oriented risk communication and informed preparedness for all vulnerable Australians.

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<sup>7</sup> <http://www.bom.gov.au/info/thunder/#precautions> note use of the expression “dangerous weather”

Using fire weather as an example: If you lived in the Mallee and looked at

[http://www.bom.gov.au/cgi-bin/wrap\\_fwo.pl?IDV22000.txt](http://www.bom.gov.au/cgi-bin/wrap_fwo.pl?IDV22000.txt) on the given date, you would find:

IDV22000

Australian Government Bureau of Meteorology  
Victoria

Priority Fire Weather Warning

Issued at 1045 on Wednesday the 27th of September 2006 for Wednesday 27<sup>th</sup> September 2006.

Fire danger is expected to become extreme in forests in the Mallee district on Wednesday the 27th September 2006.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

Such information should all be accessed obviously and intuitively from the proposed dangerous weather site.

## **Section 3      Full study**

### **Aims**

The study aimed to learn how:

- householders who speak little or no English at home learn of impending weather extremes;
- weather warnings pass through NESH communities;
- people respond to weather warnings; and
- to improve weather warning content, delivery, diffusion and responses.

Perceptions of risk and local hazard knowledge, support networks and predisposition to precautionary responses were also surveyed.

### **Methodology**

#### **Scoping phase**

- 1.1      Contact Migrant Resource Centre (MRC), Townsville for identified weather warning issues among NESH;
- 1.2      Use focus groups and one-on-one interviews to further identify and clarify issues and possible solutions;
- 1.3      Compare preparedness and warnings with prior and possibly parallel studies of mainly English speaking households in the north Queensland region;
- 1.4      Collate related legislation and government guidelines for service provision;
- 1.5      Review literature of documented issues of effectively getting weather warning (or other 'social good') messages into NESH (ie EMA 2002).
  
- 2.1      Use contacts within the MRC and other networks across Australian population centres to further clarify issues of weather warning communication and response triggers to NESH;
- 2.2      Explore and recommend ways to improve the information content to maximise active responses;
- 2.3      Explore and recommend ways to further empower information networks; and
- 2.4      Include community radio, TV and other networks where applicable.

## Section 4 National immigrant composition

Table 1

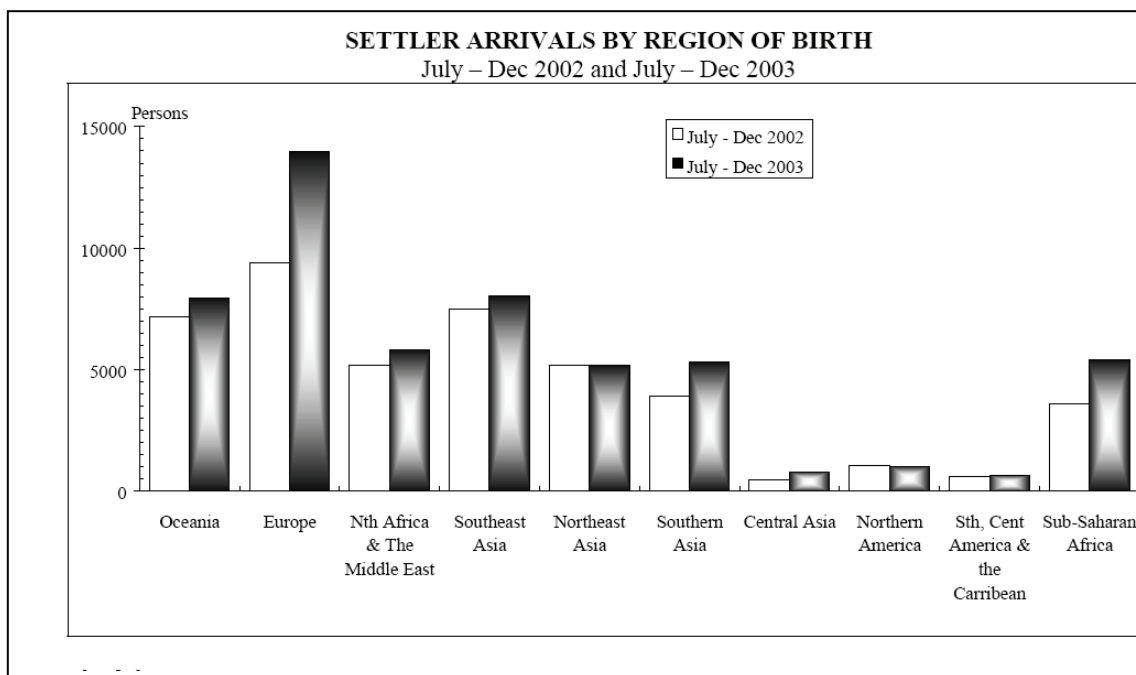
### 1.3. SETTLER ARRIVALS BY BIRTHPLACE AND ELIGIBILITY CATEGORY - JULY TO DECEMBER 2005

BIRTHPLACE	Eligibility Category									Total
	Family	Skill				Special Eligibility	Humanitarian Program	Non-Program Migration		
		Sponsored (a)	ENS	Business	Independent (b)		Refugee & SHP	NZ Citizen	Other	
<i>OCEANIA</i>										
New Zealand	-	5	2	-	6	-	-	8,580	9	8,602
Polynesia (excl. Hawaii)	555	213	24	-	157	-	-	509	2	1,460
Other	96	43	8	4	146	1	3	135	15	451
<i>TOTAL</i>	<i>651</i>	<i>261</i>	<i>34</i>	<i>4</i>	<i>309</i>	<i>1</i>	<i>3</i>	<i>9,224</i>	<i>26</i>	<i>10,513</i>
<i>EUROPE</i>										
UK & Ireland	2,471	2,401	637	281	6,264	45	-	412	223	12,734
Western Europe	468	79	94	19	456	4	-	40	41	1,201
Northern Europe	106	19	6	4	42	4	-	2	9	192
Southern Europe	108	14	15	4	35	-	-	-	11	187
South Eastern Europe	622	55	10	4	146	-	27	70	33	967
Eastern Europe	359	50	24	5	307	-	-	28	9	782
<i>TOTAL</i>	<i>4,134</i>	<i>2,618</i>	<i>786</i>	<i>317</i>	<i>7,250</i>	<i>53</i>	<i>27</i>	<i>552</i>	<i>326</i>	<i>16,063</i>
<i>NORTH AFRICA &amp; THE MIDDLE EAST</i>										
North Africa	183	79	1	13	74	-	2,138	9	7	2,504
Middle East	1,366	159	6	33	385	3	1,176	58	57	3,243
<i>TOTAL</i>	<i>1,549</i>	<i>238</i>	<i>7</i>	<i>46</i>	<i>459</i>	<i>3</i>	<i>3,314</i>	<i>67</i>	<i>64</i>	<i>5,747</i>
<i>SOUTHEAST ASIA</i>	4,209	1,742	62	230	2,253	-	305	205	86	9,092
<i>NORTHEAST ASIA</i>	2,759	906	107	1,274	2,154	-	72	241	29	7,542
<i>SOUTHERN ASIA</i>	1,732	1,678	53	84	3,514	-	13	259	15	7,348
<i>CENTRAL ASIA</i>	702	4	-	1	40	-	767	3	1	1,518
<i>NORTHERN AMERICA</i>	681	103	79	23	248	3	-	68	106	1,311
<i>SOUTH AMERICA, CENTRAL AMERICA &amp; THE CARIBBEAN</i>	489	87	14	4	330	-	6	8	24	962
<i>SUB-SAHARAN AFRICA</i>	945	578	288	95	1,237	-	1,781	326	15	5,265
Not Stated and Other NEI	339	16	13	-	51	-	-	24	-	443
<b>TOTAL ALL COUNTRIES</b>	<b>18,190</b>	<b>8,231</b>	<b>1,443</b>	<b>2,078</b>	<b>17,845</b>	<b>60</b>	<b>6,288</b>	<b>10,977</b>	<b>692</b>	<b>65,804</b>

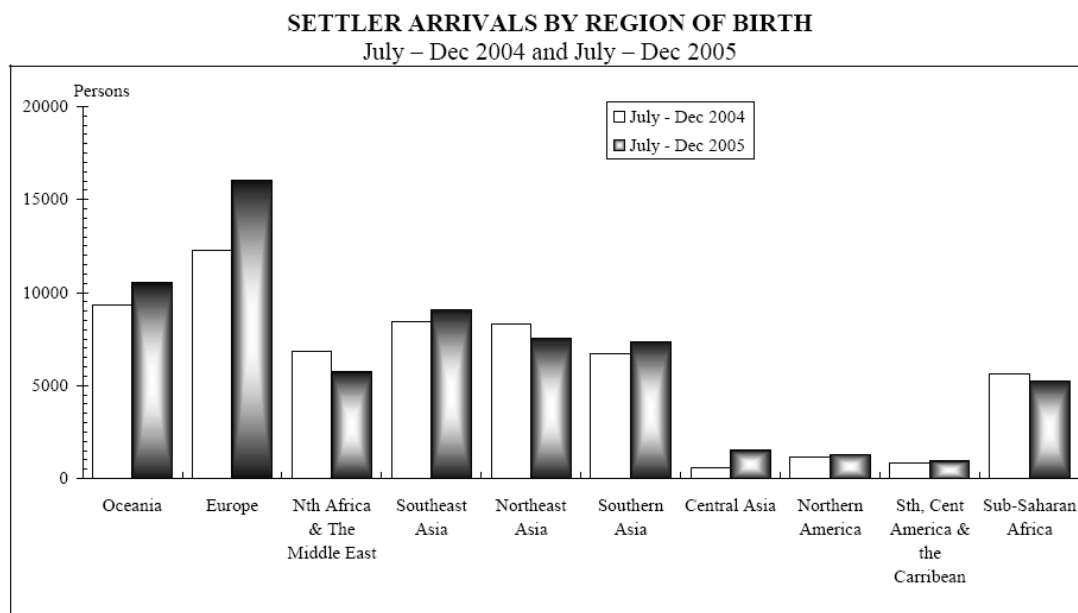
(a) Replaced Australian Linked and Regional Linked from 1 July 1999.

(b) Includes 46 Distinguished Talent Category and 1,291 Skilled Independent Regional.

[http://www.immi.gov.au/media/publications/statistics/immigration-update/update\\_dec05.pdf](http://www.immi.gov.au/media/publications/statistics/immigration-update/update_dec05.pdf) . Research and Statistics Section Department of Immigration and Multicultural Affairs Immigration Update July - December 2005  
Release Date: April 2006. p 11.

**Figure 1**

Research and Statistics Section, Department of Immigration and Multicultural and Indigenous Affairs. Immigration Update. July - December 2003. Released: August 2004. Commonwealth of Australia 2004.

**Figure 2**

[http://www.immi.gov.au/media/publications/statistics/immigration-update/update\\_dec05.pdf](http://www.immi.gov.au/media/publications/statistics/immigration-update/update_dec05.pdf). Research and Statistics Section Department of Immigration and Multicultural Affairs Immigration Update July - December 2005 Release Date: April 2006. p.1.

**Table 2****5.40 SETTLER ARRIVALS(a)**

Country of birth(b)	1983-84			1993-94			2003-04		
	Rank no.	Number '000	Proportion %	Rank No.	Number '000	Proportion %	Rank no.	Number '000	Proportion %
United Kingdom	1	13.0	18.8	1	9.0	12.8	1	18.3	16.4
New Zealand	3	5.8	8.4	2	7.8	11.1	2	14.4	12.9
China (excl. SARs and Taiwan Province)	9	1.6	2.3	7	2.7	3.9	3	8.8	7.9
India	11	1.6	2.3	8	2.6	3.8	4	8.1	7.3
South Africa	8	1.6	2.4	9	1.7	2.4	5	5.8	5.2
Sudan	79	0.3	0.0	39	0.3	0.5	6	4.6	4.1
Philippines	4	2.9	4.2	4	4.2	6.0	7	4.1	3.7
Malaysia	7	1.7	2.4	13	1.3	1.8	8	3.7	3.3
Indonesia	16	1.0	1.4	25	0.6	0.9	9	2.6	2.3
Singapore	25	0.6	0.8	30	0.5	0.7	10	2.2	2.0
Vietnam	2	9.5	13.8	3	5.4	7.8	11	2.2	2.0
Iraq	39	0.3	0.4	14	1.1	1.6	12	1.9	1.7
Zimbabwe	34	0.4	0.6	57	0.1	0.2	13	1.6	1.5
Fiji	28	0.5	0.8	12	1.3	1.9	14	1.6	1.4
Sri Lanka	14	1.5	2.1	10	1.4	2.1	15	1.6	1.4
United States of America	13	1.5	2.2	11	1.4	2.0	16	1.4	1.2
Lebanon	15	1.4	2.0	15	1.1	1.5	17	1.3	1.2
Afghanistan	58	0.1	0.1	22	0.7	0.9	18	1.2	1.1
Hong Kong (SAR of China)	5	2.0	2.9	6	3.3	4.8	19	1.1	1.0
Pakistan	53	0.1	0.2	34	0.4	0.6	20	1.1	1.0
Other	..	21.8	31.7	..	22.8	32.7	..	23.9	21.4
<b>Total</b>	<b>..</b>	<b>68.8</b>	<b>100.0</b>	<b>..</b>	<b>69.8</b>	<b>100.0</b>	<b>..</b>	<b>111.6</b>	<b>100.0</b>

(a) Information in this table is based on stated traveller intention at arrival and has not been adjusted for change in traveller intention or multiple movement.

(b) The countries selected are based on the 20 highest ranked source countries in 2003-04.

Source: Migration, Australia (3412.0).

<http://www.abs.gov.au/Ausstats/abs@.nsf/bb8db737e2af84b8ca2571780015701e/918B6C069BF7E993CA2570DE000697EA?opendocument>

Australian Year Book 2006. ABS. Australian Government.

Figures 1 and 2, and Tables 1 and 2 show that perhaps 35,000 NESH members arrive in Australia each year, chiefly from Africa and Asia. The estimated number of NESH appears accurate: through an "...Adult Migrant English Program, DIMIA funds organisations in each State and Territory to provide tuition ... In 2003-04 more than 33 000 clients, drawn from 190 language backgrounds, were assisted by the AMEP" (<http://www.immi.gov.au/media/fact-sheets/94amep.htm>). Settlement distribution of NESH nationally is provided by the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA 2004, [http://www.humanrights.gov.au/racial\\_discrimination/facts/mig.htm#q](http://www.humanrights.gov.au/racial_discrimination/facts/mig.htm#q)), so that areas where NESH are concentrated can be properly targeted.

Not surprisingly, DIMIA offers a portal of information in many languages: <http://www.immi.gov.au/living-in-australia/help-with-english/learn-english/index.htm> . The NESH weather warning research asks where is the best 'home' for web information on Australian natural hazards; how NESH will know of any relevant potential local weather threats; how NESH will receive warnings, and how relevant organisations can develop structures to maximise NESH safety.

Table 2 shows that one section of NESH - refugees and immigrants from the Sudan - have increased in rank as Australian immigrants from 79<sup>th</sup> in 1983 through 39<sup>th</sup> in 1993 to 6<sup>th</sup> in 2003, swelling in 2003/04 to a total of 4,600 people. The Sudanese are a good group to focus on for this study. Their culture has local language dialects first, then Arabic, then possibly French. English is normally absent, or maybe a fourth language. Often traumatised by close and interminable civil war in an impoverished and drought-stricken land, learning English, including issues of, for example, bushfire on an urban fringe, is likely to seem a fairly low priority in setting up family life in a new country, in a new culture.

Usually through an interpreter, Sudanese people I spoke with saw natural hazards as a very small consideration, given what they had been through. Sudanese tend to be profoundly resilient and adaptive [e.g. a Sudanese Community Settlement Officer, Brisbane; the Sudanese woman's group, Western suburbs, Melbourne].

## **Section 5. Learning of the issues – pilot and early research**

To help define the NESH weather safety issues, the study began in the MRC, Townsville, leading six one-hour discussions with 16 NESH members (Appendix 2). This showed varying levels of: experiences with extreme weather impacts; levels of English language comprehension, and degree of community network links. There are many NESH who currently do not have any systematic or reliable source of information about warnings. Meetings included people from Vietnam, Switzerland, Thailand, Indonesia, Japan, Germany, Libya, Sudan and the Philippines. Participants had usually experienced some extreme weather in their own country, including typhoons, floods or sand storms.

The pilot groups in Townsville mainly expected their warning information to come from the television. This was only seen as an alert. They then contacted friends for more information. About one third of the pilot group did not reliably link to media reports (TV, radio, newspaper), nor had confidence in hearing from social networks.

For people with reasonable to good English language skills, it may be difficult to imagine why many chose not to listen to local radio, watch TV, or read the newspapers - they are all in an incomprehensible “foreign” language.

### **Warning content and delivery**

Pilot group participants suggested that an effective alert to NESH would be to flash something like: BIG FLOOD MAY REACH TOWNSVILLE. The English language use was very simple in discussions, and all the announcer techniques which need to be used when speaking to NESH will need to be employed: slow, clear diction, well annunciated, facing the camera so NESH viewers can see what is being said. All information deliverers, from the Bureau and emergency service providers need to remember that because their communicated meaning is clear to them (information or direction givers), the meaning may not be clear to the recipient, especially if there are great cultural experience and language divides. “Communication is the process of one person sending a message that creates meaning in another person” (Samovar & McDaniel, 2006, p. 3).

### **Experience-connected wind speed warnings**

A number of group members said they do not know what 60 km per hour may mean for wind speed – they would like to know if it may push trees over, or tear off roofs. There is merit in the Bureau using a modified Beaufort Scale to give an impact-focused description of forecast wind speed as a normal part of wind warnings.

### **Outcomes of the north Queensland scoping study**

Working with an ESL teacher, at the MRC, it becomes clear (Appendix 2) that Non-English Speaking Background (NESB) recent immigrants with the least English are more socially isolated than their peers with greater English skills. Those with least English skills follow the media least, and are thus the core



target of this research. All NESH input asked for simple, clear words. The following, from the Indigenous weather warnings study, points the way to making forecasts in the simplest ways possible. The Bureau may wish to set up a working group to review, with MCOs, some of the language used in forecasts.

### **From the Indigenous weather warnings study<sup>8</sup>**

#### **Warning words which may be very poorly understood, from the NQ Indigenous radio network, with 150 broadcast units across northern Australia**

*Study goal: Identify weather warning language which could be improved for listeners in urban and remote Indigenous Communities.*

*From Announcers, 4K1G, the BRACS network and listeners.*

*"Listeners were offended by the word 'severe' because of the cultural memory of repressive 'severe punishment' from colonial and mission days. Also, we pointed out that 'near' is better for us than 'in the vicinity of'."*

*After reading through the ninety pages of weather warnings, I found there were nearly 20 words that need to be looked at and maybe changed to make it easier for our Aboriginal and Torres Strait Islander people to understand.*

*It should be noted that the English language is either second, third or fourth language to many of us Indigenous Australians. I feel that if weather warnings are kept simple, more of us would listen and actually 'hear' what the important message is all about.*

*Below here are the words that I feel should be looked at and changed:*

<i>Intensify</i>	<i>make stronger / build up</i>
<i>Specifically</i>	<i>especially</i>
<i>Significantly</i>	<i>a lot</i>
<i>Destructive</i>	<i>very rough</i>
<i>Preliminary</i>	<i>beginning / first round</i>
<i>Exceeded</i>	<i>go above / over</i>
<i>Localized</i>	<i>local community / area</i>
<i>Hazardous</i>	<i>not safe / at high risk /</i>
<i>Rapidly</i>	<i>quickly / very fast</i>
<i>Visibility</i>	<i>to see / notice</i>
<i>Inclement</i>	<i>stormy / rainy / windy</i>
<i>Fluctuating</i>	<i>up-and-down / changes</i>
<i>Meteorological models</i>	
<i>Watercourses</i>	
<i>Inundation</i>	

*FESA's SES (example on page 16):*

*I feel the wording with this particular paragraph could be made easier to read and announce on air. Words such as relocate, adversely, reconsidered and velocity can be changed.*

<sup>8</sup> [http://www.tesag.jcu.edu.au/CDS/reports/Gou\\_IWWRpt/index.shtml](http://www.tesag.jcu.edu.au/CDS/reports/Gou_IWWRpt/index.shtml)

<i>Relocate</i>	<i>move to another area</i>
<i>Adversely</i>	<i>badly</i>
<i>Be reconsidered</i>	<i>change</i>
<i>Velocity</i>	<i>of rapid pace</i>

*As for other recommendations to improve the relationship between the Bureau and Indigenous communities, so that messages are well communicated and understood – how about producing a Manual and CD for the Indigenous media organisations.*

*The Manual can be like a resource booklet and the CD can be made on how to prepare for various weather warnings.*

*Another recommendation is making sure Indigenous media organisations regularly use their local Bureau.*

*Velma Gara  
Senior Broadcaster  
Radio 4K1G, Townsville  
North Queensland*

Gara's further recommendations are strongly supported by the NESH research, but using the "dangerous weather" web portal, rather than bulk printed booklets and CDs. The web portal will be easier to widely distribute and update with real-time information, such as is now available from some bushfire sites<sup>9</sup> and the Bureau. The well-known dangerous weather web site will service NESH, Indigenous communities and all Australian communities in potential hazard areas.

### **Non-English Speaking Background Tourists**

Simplifying the above complex language use is also likely to make plain English warnings more useful to NESB tourists. Solo NESB tourists were represented at the meeting on 26 October 2004. It is recommended that the developed peak NESH safety partnership group will encourage tourist accommodation providers to take responsibility for informing such travellers of impending threats, and assist them with making informed, safety-oriented decisions and actions through the "dangerous weather" web site.

The scoping studies (Appendices 1 to 3), along with identifying the main issues confronting households without effective English, showed that the MCOs have the NESH contact details. In Townsville, the Director said: "Yes, we do and would contact as many of [the most vulnerable] as possible, but not necessarily all. Also, we wind down over the Christmas period, so we do not have a [continuous presence]". The Director observed that religious organisations may

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<sup>9</sup> NAFI, Sentinel, AusDIN, CFA and other jurisdictions' bushfire web sites.

be closer to some community members. Other 'information tree' ideas are developed below.

Discussions with MCOs in Bowen and Cairns reinforced the Townsville findings and stressed the importance of this research for immigrants with few networks and poor English skills. It was asserted that NESH were highly vulnerable. Getting the effective 'action' weather warnings to these 'at risk' people is an important challenge. Bowen has many NESB fruit pickers, some backpackers, often without a cultural knowledge of cyclones or bushfire.

### **Information sessions for people at risk**

The groups felt there should be information sessions for people at risk, and there should be one central agency as the reliable contact point for all multicultural contacts. It was pointed out that TAFE organises English classes, and that they would have contact details for many NESH members.

### **Foster neighbour support**

A strong suggestion (applicable to the wider community) is to foster neighbour support. It was suggested that it is feasible to encouraging people in each separate suburban block to get to know each other enough, especially moving in to a crisis situation. This would help engender the current social planning policy of encouraging resilient, inter-supportive communities at the neighbourhood level, to get people onto the local 'story-telling network' (Wall, 2006).

### **Relying on warnings from a Disaster Management Group**

Once each state and territory take as given that members of multicultural groups are 'special needs groups', especially recent arrivals without English skills or entrenched informal networks, the Local Government Disaster Management Group becomes obliged to contact community multicultural support groups and community leaders to activate 'phone trees' and, where needed, door knocks.

Discussion with relevant police in Cairns showed a willingness to contact multicultural groups, as they had some contact details, but that this warning process was not 'assured', as the statutory requirement of special needs groups to 'self-identify' had not been met.

### **Relying on media warnings has problems**

It was suggested in the Cairns MCO meetings that the local radio stations, especially the ABC, can put out warnings in the dominant non-English languages. In Cairns there are representatives from Liberia, Sierra Leone, Sudan, Burundi and PNG, Hmong, China, Japan, Arabic countries and Samoa. The problems of multicultural/lingual broadcasts are that they will miss many people – those with least English rarely listen to the radio – they cannot understand it. If people with poor English did listen endlessly, they may belong

to a minority language group, such as one of the 500 languages of PNG. The most vulnerable, language-wise, may be doubly marginalised by speaking a language not included in the mainstream multi-lingual broadcasts, so broadcast (or written) multilingual weather warnings can at best be a small part of a multi-pronged warning strategy. MCOs argued for the use of images – simple iconographs, pictures and computer simulations of the real threat over the real landscape at risk, and a web-based information and real-time depictions of any looming threat, all well-known and easily accessed by MCOs.

### **Big strong warnings**

Work with remote Indigenous community and the pilot work with NESH make a compelling case that the only adjectives for threatening bushfire weather, cyclones, destructive winds and floods are: 'big' and 'strong'.

Along with the 15 member NESH focus group in Townsville, the Migrant Settlement Services (MSS) work team in Cairns (from Africa, Philippines, PNG and NESB Europe) was strongly of the view that other adjectives: severe, extreme, dangerous, destructive, major or disruptive were not properly understood, so the communication content fell rapidly when we strayed away from 'big' or 'strong'. This may feel like an unreasonable limitation to forecasters, but risk communication depends on the receiver hearing and understanding the message.

As the MSS looks after migrant access to services, it is reasonable for the MSS to extend its development considerations to ensuring that recent migrants can feel they have access to major weather warnings, and how to maximise their safety.

### **Text Messaging**

Basically all Philippines households in Cairns have at least one mobile phone, nearly all Samoan, but perhaps only 40% of Africans. The group agreed that most NESH have mobiles. This information, combined with trialling of bulk warning phone messages by Telstra in Victoria, may mean that the potential of 'standing phone trees' for each community may not be an impossible dream. In September 2006, those trials appear clouded in legalistic issues of privacy rights and constraints against unsolicited calls.

### **Information kits gain further support**

The director of MSS in Cairns suggested the development of information kits, like community health information, using pictures to illustrate a wide range of dangers in Australia, including spiders, snakes, cyclone and floods – to broaden the education base and place weather extremes in fully with other community safety issues: combining community health with natural disasters. There appears merit in this idea as part of community safety education projects which may need to be developed. This preventative approach should be supported.

Cairns has a community radio – Festival Fair – which broadcasts in over 30 languages. It is recommended that Festival Fair are contacted to be invited as part of the team to develop radio ‘community education’ prior to weather threats to let NESH know in general what form Australian weather threats may take.

### **Developing a pilot NESH weather warning information and safety package**

The Cairns group and I spoke about the idea of a project to develop a weather warning package for NESH, and to get feedback from their client base. This could take the form of further meetings from late February to meet with recent immigrants and workshop material for testing through two rounds of mail-outs with the MSS’s usual newsletter, a well produced monthly of about six pages. Simple weather warning methods can be pilot tested in this way. A submission to EMA in early 2005 (see Appendix 9) was unsuccessful.

### **These recommendations need support and impetus from the COAG safety working group**

These approaches, if successful, will feed in well to the COAG mitigation ‘paradigm shift’ in disaster management (COAG, 2004), and should get support at the national level through the Community Safety Working Group. It is through this same working group that a proposal to Australia Post allowing resultant information packs to be placed on all post office counters from October to March will be sought. Nationally, we can work toward developing two basic packs, for the northern and more southern parts of Australia, distinguished by cyclone and storm surge information and fire type – crown or grass.

Without prompting, the spokesperson for each of eight organisations visited in Brisbane suggested that there should be an information package for recent immigrants. In discussion with Carlton Meyn, of Volunteer Queensland, it was reinforced that many recent immigrants may not have experienced a cyclone or a flood – these extremes may not be in their cultural experience. Carlton raised the idea that there should be “dangerous weather and safety information training”.

**NESH Recommendation 1:** That State, Territory and Local Government Disaster Management Groups (Counter Disaster Committees) accept as given that members of multicultural groups with low English skills are viewed as automatically ‘self identified’ as special needs, in terms of disaster warnings and consequent safety needs. Thus each Disaster Management Group, when activated to respond to a disaster situation, will automatically make exhaustive efforts to contact the local multicultural groups or leaders, active or in abeyance, to trigger multicultural workers, volunteers and community leaders to contact all members of the multicultural community under threat.

The web-based information and phone tree models outlined in this report seem simple and workable, formalising a process likely to be followed anyway, within existing structures and relationships. Developing an acceptable web-based information package will require input from many sources.

Anyone with knowledge of existing multicultural disaster warning packages should be encouraged to participate.

Given that practically all recent NESH are reported to have at least one phone, almost always a mobile, the model seems sound to (a) maximise exposure to NESH that dangerous weather is likely to threaten their safety, and (b) ensuring they are helped to maximise their own safety.

The likely effectiveness of this model was further tested with representatives of the Islamic women, Turkish and Somalian community leaders in Melbourne in late December 2004 (Appendix 5). They confirmed what representatives of many multicultural groups in Queensland established: all recent NESH have at least one phone, usually a mobile. The Somalian representative pointed out that they may not have a phone during the first two months, but that all such recent refugees were in provided crisis housing, and are closely supported by the relevant agencies, and that those agencies are included in the NESH disaster phone tree model.

Contacts may be cross-referenced through DIMIA at a state level. There is a suggestion that DIMIA may take on a role as federal repository of the collated Multicultural Resource Directories so that there is one source for all group contacts across Australia. This will be useful, for example, when there are major cross border threats. Details of group contacts can be then easily sourced from different state or territory jurisdictions. Threats in Australian weather hazards can be across state or territory borders, such as the 1974 floods in the Brisbane area, which had associated flooding into northern coastal NSW. The extensive floods of 1976 in northern Australia crossed three jurisdictions and cyclones readily cross borders.

### **Who pays for the volunteer phone calls?**

There is the unresolved issue of who pays for all the 'phone tree' mobile phone warning calls, once the disaster has either veered away or the recovery is well underway. As this is a precautionary (mitigation/COAG, 2004) approach to disaster management, we need to consider that this phone tree will be activated fairly early in the warning process, once it seems likely the threat will materialise. However, once this non-English speaking phone tree mechanism has begun, it will need to fully activate. In the meantime, the threat may weaken or veer off. The area may not become disaster declared, but the possibly \$40 of mobile calls from community leaders will still have been spent. With people already giving their time for community safety, they should not have to pay as well. They have enough financial demands already.

The first consideration would be through the National Disaster Relief Arrangements (NDRA). However, what if the threat lessens, and no disaster is declared? This issue needs resolution to cover material costs of organisations and community leaders to help support the NESH phone tree warning model. Visits to representatives of MCOs in Melbourne showed that the phone tree model is sound.

## Section 6 Threat information and detailed safety instructions

This section opens with drafts of the core, plain English information needed to maximise community safety. It has been developed with NESH groups, presented at international conferences (Goudie, 2004; Goudie, 2005), and generally seems adequate as a simple but comprehensive way of conveying before, during and after information in ways that can be easily translated into Australian NESH languages. The information remains too simple. There are many nuances, and much refinement needed, beyond the scope of this solo issues and solutions research. Graphics are needed, along with web designers and multicultural panels, and experts in threat-zone mapping. The three following documents relating to flood, wind and fire warnings were drafted and refined in multiple MCO groups in Brisbane and Melbourne. They are a good foundation for refinement.

The bulk of Section 6 is focused on existing web information for householders to maximise their safety if they live in a bushfire zone and a bushfire is imminent. I have exhaustively reproduced many sites to show the great amount of duplication, and lack of cross-linkage. There were no obvious links in any of the bushfire sites to the Bureau's warning site. Within state or territory jurisdictions, there is some cross-linkage, but far from a coherent intermeshing of the massive amount of useful information that people could draw from for their own unique location, threat(s), language and time.

All bushfire web sites, along with other prominent links, should now be linked to the AusDIN site: <http://www.ausdin.gov.au> or <http://www.cfs.org.au/> which is the South Australian Country Fire Service householder bushfire safety site (perhaps the most comprehensive, plain English information), and for NESH and MCOs, particularly: [http://www.rfs.nsw.gov.au/dsp\\_content.cfm?CAT\\_ID=515](http://www.rfs.nsw.gov.au/dsp_content.cfm?CAT_ID=515) which is the NSW Rural Fire Service, with information in 27 languages, to cross-reference preparedness information.

It is important to have information from independent, authoritative and trusted sources (Rohrmann 2000, Handmer 1999, 2000). All bushfire sites should have prominent links to the Bureau's current warnings: <http://www.bom.gov.au/weather/warnings.shtml>, and to real-time national fire maps: <http://sentinel.ga.gov.au/acres/sentinel/index.shtml>, or, for northern Australia real-time fire maps: <http://www.firenorth.org.au/nafi/app/init.jsp>, or others listed in the NAFI site. It would be poor politics to single out a best site, and it is poor personal politics to say that many of these specific threat sites are difficult to find within the parent site. Some require successfully choosing correctly from an array of small-font choices through five layers of the site. Web users in the Innisfail area ahead of Cyclone Larry reported how distressing that was (King et al, 2006).

It is recommended that a good web designer, with no special disaster skills or specific group or jurisdiction affiliation be engaged with the brief of making all disaster information, as described in this report, most intuitively accessible by all peoples with web access in Australia.

# FLOOD Information

## STAY SAFE. STAY DRY.

### Staying safe through extreme weather

Take care and keep safe

#### Floods

- Learn about flooding in your area
- Move to safety early if unsafe in a low area
- Talk to friends and neighbours
- Seek information as a flood starts
- Stay safe or move to somewhere safe
- Do not drive into floodwaters
- Do not let your children play in floodwaters

#### **1. Knowing about floods in Australia, and your safety**

In Australia, floods can be quick and deep. In some places, they last for months. The worst thing to do is to drive into flood waters. People drown.

Sometimes there are flash floods, which come quickly, and the Bureau and the media do not have much time to try to warn everybody. With bigger floods, there is normally some warning time. If you can watch the evening news, it may tell you that there is a lot of rain expected. This may lead to flooding. If there is a lot of rain in your area, flooding may follow.

#### **2. If your home may be flooded or isolated by floods**

If you live in a very low area, and worry about your home flooding or being surrounded by water, it is best to move early to a friend with a safer house. If your safety is threatened, people from the police or emergency services may come and advise you to leave (evacuate) your home and move to higher ground. They will only do this if they believe your home may become surrounded by flood waters, your way of leaving your home may be covered by too much water to drive through, or water may come into your home. If you do not leave early and the emergency services or police ask you to leave, please follow their directions. They only ask you to evacuate if they believe there is a high risk to your safety.

#### **3. Talk to friends and neighbours**

If you are unsure about the chances of a flood happening, ring a friend, talk to neighbours (most people love to talk about the weather), your community leader or your multicultural organisation and ask for their advice on the weather and flooding.



#### **4. Working to warn you of major threats**

The weather bureau and others are working to develop a way to warn you if where you live is likely to be in a big flood. People will ring your multicultural organisation, which will ring your community leader, who will make sure you know of the threat of flooding in your area, and what to do. But you already know what to do if you are threatened by a flood. You have read this advice!

#### **5. Get safe, stay safe**

Flooding rains often come with strong winds, so be very careful when there is lots of rain and strong winds. See the sheet on damaging winds. The main message here is to stay out of the flood waters. Change your travel plans. Make other arrangements. Stay safe.

#### **6. Do not drive into floodwaters**

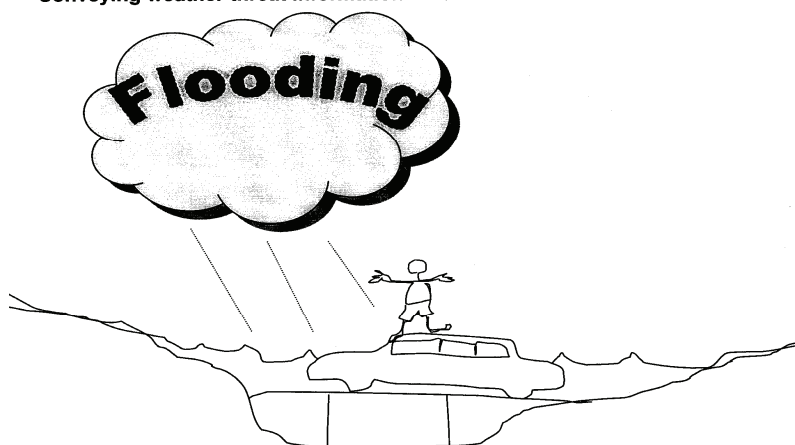
Most people get into trouble in floods by being washed off floodways in their cars. Change your travel plans to avoid travelling through flooded roads. Your safety is most important.

#### **7. Do not let your children play in floodwaters**

The greatest danger to children and teenagers is to play in floodwaters and get injured by rubbish in the water, or get sucked into drains and drown. Floods are fun and exciting, but people get injured or drown. Take care and make sure your family do not end up needing help to get out of floodwater.

Do not drive into floodwaters

Conveying weather threat information - flood



# **STAY SAFE. STAY PROTECTED DURING DAMAGING WINDS.**

## **Staying safe through extreme weather**

### **Damaging Winds**

- **Learn about damaging winds in your area**
- **Clear up all loose items in your yard**
- **Make sure nothing can be blown off your roof or walls**
- **If your house is strong stay inside during the winds**
- **If your house is old and weak, move early to somewhere much stronger**
- **If the strong winds have rain and floods as well, stay somewhere strong and above any possible flood**
- **Talk to friends and neighbours**
- **Make safe where you are or move somewhere safe early**
- **Do not travel in strong winds**

#### **1. Knowing about damaging winds in Australia, and your safety**

In Australia, winds can be fast, narrow and destructive, or as big as a cyclone (typhoon or hurricane). Most of Darwin was destroyed by cyclone winds in 1974. Objects flying through the air can kill you. Dust can cause breathing problems. If you know damaging winds are coming, stay inside in a strong place. If there is a cyclone and big floods are likely as well, stay in a strong place above any possible flooding. Do not go outside during big winds.

Sometimes there are damaging winds, which come quickly, and the Weather Bureau and the media do not have much time to try to warn everybody. With bigger windstorms or cyclones there is normally some warning time. If you can watch the evening news, it may tell you that damaging winds are expected.

## **2. If your home may be damaged by winds**

If strong winds are coming, clear up your yard of anything that can blow around – timber, sheets of metal roofing, flat things, light things like plastic garden chairs. Make sure your roof and walls are strong and all properly joined together. If in a weak house, move somewhere much stronger. Higher, newer places with small or well protected windows are best if you may be hit by a cyclone. The sea can come up over low parts of the land during the worst of the cyclone. Put mattresses in the strongest, most sheltered place in your house. Shelter there if a cyclone gets near. Keep plenty of fresh water, food, candles, torches and a portable radio and fresh batteries to hear weather updates. Electricity may go off for days.

If your safety is threatened, people from the police or emergency services may come and advise you to leave (evacuate) your home and move to a strong shelter. If you do not leave early to somewhere much safer, and the emergency services or police ask you to leave, please follow their directions. They will only ask you to evacuate if they believe there is a high risk to your safety.

## **3. Talk to friends and neighbours**

If you are not sure about the chances of a damaging winds happening, ring a friend, talk to neighbours (most people love to talk about the weather), your community leader or your multicultural organisation and ask for their advice on the weather and flooding.

## **4. Working to warn you of major threats**

The Weather Bureau and others are working to find a way to warn you if where you live is likely to be in a damaging wind. People from disaster management will ring your multicultural organisation, which will ring your community leader, who will make sure you know of the threat of flooding in your area, and what to do. But you already know what to do if you are threatened by damaging winds. You have read this advice!

## **5. Get safe, stay safe**

Damaging winds may come with rain and flood; or with great dust storms. In Australia, be very careful when there is lots of rain and strong winds. See the information sheet on flooding. The main message is to stay inside during damaging winds. If you hear that damaging winds are coming toward where you live, store things so they will not blow about, and stay inside a strong building. Things may be flying through the air, trees may be blown over and dangerous power lines may be on the ground. Stay safe.

**STAY SAFE. STAY INSIDE AND SHELTER AWAY FROM THE WINDY SIDE OF THE HOUSE, IN THE STRONGEST PLACE.**

Make your house and yard secure, then stay safe inside

## STAY SAFE. STAY PROTECTED.

### **Fire weather**

- **Learn about fires and fire weather in your area**
- **Leave early or stay and prepare, make that decision early**
- **Talk to friends and neighbours**
- **Listen out for any warnings**
- **Get safe and stay safe**
- **Do not drive about in a fire**

#### **1. Knowing about fire weather in Australia, and your safety**

In Australia, fires start and move very quickly. Normally there is 'fire weather' leading up to big fires from September to February, if plants and the ground are very dry and the weather has been very hot and dry, with strong hot winds. You can see and smell the smoke. Fires can travel at 80 kph, and change direction with the wind, or rush up slopes or valleys. If you live on the edge of a town or city, or in the bush, you may be threatened by a big bush fire.

#### **2. Leave early or stay and prepare, make that decision early<sup>10</sup>**

When you learn about a fire coming your way, leave early or stay:

- Making sure your house will not burn, or will be slow to burn;
- If you have old people, young children, disabled, sick or asthmatic people in your home, they should leave to somewhere safe, well away from the fire or smoke;
- Among the worst things to do is to drive into the smoke or get trapped in your vehicle in a big bushfire, the heat can kill you even though you may park in the middle of the road. People die.

Sometimes in fire weather, fires start and spread quickly, and the Weather Bureau and the media do not have much time to try to warn everybody. With bigger fires, there is normally some warning time. If you can watch the evening news, it may tell you that there is a high fire danger. Think early about whether your family should leave or stay. Make sure your yard and roof gutters are clear of things that may burn. A bushfire is frightening.

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<sup>10</sup> We have recently had very bad fires in and around Canberra, and in South Australia. People were burned to death. Many people die in bush fires in Australia because they drive in the fire, and get trapped and burn to death.

### **3. Going or staying**

If your home may be threatened by fire, you can:

- Clear your yard and wet your house, then leave early, or stay, wet your house down;
- Clear things and plants from near your house;
- Cut down trees and move the branches a long way from your house, then;
- Stay inside while the fire passes through – get down, get low;
- Then run into the area that has burned. If you are very worried, it is best to move early to a friend with a safer house;
- If your safety is threatened, people from the police or emergency services may come and advise you to leave (evacuate) your home and move away from the fire threat. They will only do this if they believe your home may burn. If you do not leave early and the emergency services or police ask you to leave, please follow their directions. They only ask you to evacuate if they believe there is a high risk to your safety.

### **4. Talk to friends and neighbours**

If you are unsure about the chances of a fire happening, ring a friend, talk to neighbours (most people love to talk about the weather), your community leader or your multicultural organisation and ask for their advice on the weather and fire threat.

### **5. Working to warn you of major threats - listen out for warnings**

The Weather Bureau and others are working to develop a way to warn you if where you live is likely to be in danger from fire. People will ring your multicultural organisation, which will ring your community leader, who will make sure you know of the threat of fire in your area, and what to do. But you already know what to do if you are threatened by a fire. You have read this advice!

### **6. Get safe, stay safe**

Big fires often come with strong winds, so be very careful when there is fire weather and strong winds. See the sheet on damaging winds. The main message is to clear around your home, wet down then stay inside if your house is not made of wood. If you hear, smell or see that a big fire is coming toward where you live, get things cleared and wet, and stay inside a solid, safe building. The heat is often intense, and burning things may be flying through the air. After the fire, trees and buildings may fall without warning, and dangerous power lines may be on the ground. Stay safe.

**DO NOT DRIVE INTO A FIRE. ACT EARLY, STAY SAFE.**

### **Section 6.1. Web-based household bushfire advice**

Provided separately 18 April 2007, Web review of bushfire information

## Section 7 Collated recommendations

### Section 7.1 Web-based information packs, simulations and real-time threat status

**NESH Recommendation 2: Develop information packs and delivery systems from web sources through to community multicultural groups for NESH to know extreme weather dangers and want to maximise safety responses**

The Bureau is encouraged to explore national partners to:

- (a) develop information packages – to be piloted with select local MCOs; and
- (b) develop a training package for multicultural organisations and volunteers, in collaboration with Volunteer Queensland.

If Cairns is deemed unsuitable as a pilot development of NESH weather warning information because it has a low bushfire threat, they could work on cyclone, storm surge and flood, in collaboration with another or other groups with high bushfire risk.

However the recommendations are developed, it is the outcomes of this research which is developed: it is important that all information relies heavily on images rather than words. Some examples of clear ‘universal’ symbols are given. The NESH research consistently showed people identified with the old Bureau symbol as a cyclone, and that the line drawing of a person on a flooded car roof has clear and graphic meaning to many cultural groups: don’t drive into flood waters.

The reasons for information packages are clear – recognising the impending extreme weather as a threat may not occur until it is too late for safety-oriented responses (including such learned behaviour as not driving into flooded roadways). Also, many recent arrivals in Australia would not know how to maximise their safety, say if a bushfire (such as Canberra 2002) was threatening their local area.

Providing ‘static’ information in a world of many new experiences, disorientation and demands for the NESH’s attention may mean the brochures are not read. There is merit in developing a web source with people and PowerPoint presentation which volunteers could share with members of each of the multicultural groups in disaster-prone areas, especially cyclone, flood and fire.

The Northern Territory has cyclone preparedness kits with action guides in eight languages: Arabic, Chinese, Croatian, Greek, Indonesian, Portugese, Serbian, Thai and Vietnamese available at the web site:

[http://www.nt.gov.au/pfes/es/community/guides/cyclone/action\\_guides\\_foreign.html](http://www.nt.gov.au/pfes/es/community/guides/cyclone/action_guides_foreign.html)

By collating the information to home owners from many sources in Section 6.1, the essential information emerges, as presented using bushfire preparedness as an example. The essential messages will help all Australians with graphics of threats, safety responses of either making safe where you are if strong and flood-free; or moving early to a place of high safety. It has been suggested that this web address, a template of community safety, be sent to the media, police and schools in the early phases of a looming threat. That the media are in partnership with the Bureau is reinforced each year when the Bureau sends a letter to media outlets 'reaffirming the partnership'.

### **Web site design – location, threat and main language**

The safety weather warnings site will have choice of:

1. region (perhaps Tasmania, South eastern Australia, south western Australia and Northern Australia);
2. language ( at least the ten most frequent languages of NESH – Arabic, Somali, French, ... to be determined by DIMIA and informed by regions in hazard zones);
3. Threats – fireweather, destructive winds, and flood weather;
4. Direct hyperlinks between this site and EMA for more detailed safety planning on lightning, cyclones and destructive storms;
5. Direct hyperlinks back to meteorological detail of all the disruptive weather events, including large hail.

The NESH weather warning package for development will focus on communicating the nature of the four hazards – wind, fire, cyclone and flood, and how to maximise household safety – stay where you are and strengthen if basically safe, or move early in the warning process to a place of clearly greater safety. The developed approach will attempt to be 'whole-of-government' and multi-media, seeking direct support from DIMIA, EMA and the Department of Health.

### **Web site design**

The proposed weather safe web site will have: dangerous weather portal; region (clickable, scaleable map, like Bureau radar maps); threat type (fire, flood, cyclone, storm surge; wind, hail); current threats; language; detail; pictures; background; long term safety precautions; pre-season preparations; as the threat approaches; during impact; and after impact.

This portal will link to many specialised sites, and cross link with related Bureau sites, such as:

[http://www.bom.gov.au/cgi-bin/wrap\\_fwo.pl?IDV22000.txt](http://www.bom.gov.au/cgi-bin/wrap_fwo.pl?IDV22000.txt)  
IDV22000

Australian Government Bureau of Meteorology  
Victoria

Priority Fire Weather Warning  
Issued at 1045 on Wednesday the 27th of September 2006 for Wednesday 27<sup>th</sup> September 2006.

Fire danger is expected to become extreme in forests in the Mallee district on Wednesday the 27th September 2006.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The issues with needing one, well known and linked dangerous weather site is that all the information needed is probably somewhere on the web, but finding firesafe behaviour while searching within the Bureau site proved frustrating.

## Section 7.2 Phone trees

The research feedback from the north Queensland pilot to December 2004 was that practically all recent NESH have at least one phone, usually a mobile. Near 100% phone ownership by NESH is the basis of the model to (a) maximise exposure to NESH that dangerous weather is likely to threaten their safety, and (b) ensuring they are helped to maximise their own safety.

**NESH Recommendation 3\*:** Guaranteeing that NESH hear the warning. Early in the disaster threat alert, the Local Government Disaster Management Group phones all MCOs in the threatened areas, informing them of the perceived threat.

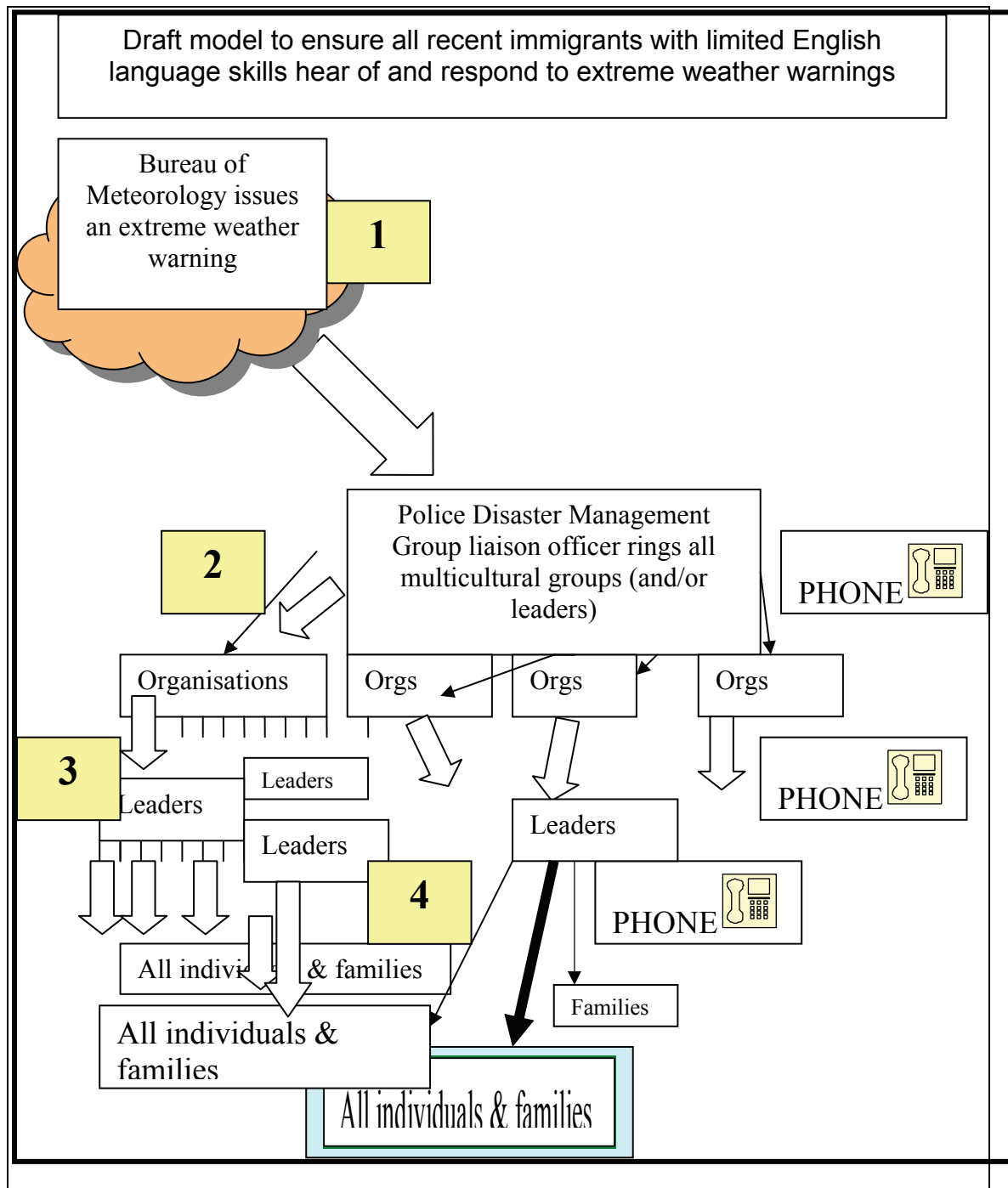
\* Note: all developing NESH safety weather warnings recommendations are for use in all Australian local government areas with recent immigrants with poor English language skills.

The draft model (Figure 3 below) will ensure that all recent immigrants with limited English language skills hear of and respond to extreme weather warnings:

1. Bureau of Meteorology issues extreme weather warning;
2. Police Liaison officer with the local disaster management group, having established the severity of the threat, contacts all the active multicultural groups (and/or community leaders) in the threat area;
3. Each organisation phones their community leaders and contacts;
4. The leaders contact all their community members, with the message including safety responses and to “tell your friends”.



**Figure 3: NESH disaster warning mobile phone tree model**



## Section 8. Referenced discussion

### Definitions, language, cognition and behaviour

This research is focused on targeted information delivery and uptake – effective risk communication. The medium is the Internet, face-to-face meetings, local and national radio, newspapers and television, Government bodies like DIMIA, EMA, the Bureau, TAFE, schools and MCOs. The information is in words or images. A key element of the medium and the message is language. It is important that all participants reasonably agree on word use and meanings.

This section starts in the comfort zone of simple definitions, then considers semiotics (the way we put linked ideas, signs and symbols together), considers core issues of world views (paradigms), finishing with the uneasy realities of our knowledge base, our epistemological orientation:

<http://www.lycaeum.org/drugs.old/other/brain/>  
<http://plato.stanford.edu/entries/descartes-epistemology/>  
<http://en.wikipedia.org/wiki/Epistemology>

For the NESH and remaining Indigenous weather warning recommendations to be adopted, some of the underlying knowledge foundations of context, intent and behavioural motivation need to be considered – how humans construct, transfer, acquire and use knowledge.

Meteorologists have specialist knowledge and concepts based on their world view. A meteorologist may think of a Hadley Cell <sup>11</sup>, and then try to transfer their knowledge of a Hadley Cell's impact on Australian weather to some-one with uncertain prowess in the English language. Effectively transferring knowledge is an art.

Imparting meteorological knowledge to target audiences to engender safety-oriented responses is a complex exercise in social marketing, explored later. As the information promulgators, meteorologists and other agencies should understand a little of perception (the raw data from the outside world entering an organism via one of the five senses): cognition (internal processing, analysing, information storage and processing); attitudes (how we think and feel about particular issues, implying a predisposition to specific action); language use; and links to behaviour.

It could be argued this research is a psychology exercise in social marketing - [http://www.amazon.com/gp/reader/0761924345/ref=sib\\_dp\\_pt/103-2228664-4009451#reader-page](http://www.amazon.com/gp/reader/0761924345/ref=sib_dp_pt/103-2228664-4009451#reader-page).

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<sup>11</sup> A Hadley Cell is an explanation for an equatorial atmospheric circulation pattern – [http://www.sciencedaily.com/articles/h/hadley\\_cell.htm](http://www.sciencedaily.com/articles/h/hadley_cell.htm)

## 8.1 Language and symbols

### Agreed word meanings

#### **Community**

A group of people with a commonality of association and generally defined by location, shared experience, or function.

#### **Emergency**

An event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response

#### **Hazard**

A source of potential harm or a situation with a potential to cause loss. (In emergency risk management – a situation or condition with potential for loss or harm to the community or environment.)

#### **Prevention**

Measures to eliminate or reduce the incidence or severity of emergencies.

#### **Risk treatment options**

Measures that modify the characteristics of hazards, communities and environments to reduce risk, e.g. prevention, preparedness, response and recovery.

#### **Vulnerability**

The susceptibility and resilience of the community and environment to hazards.

(Kobb, 2000)

### **Words and ideas**

There is no national agreement on emergency management terms and definitions in Australia. This is because emergency management overlaps many other fields of endeavour, is influenced by European and American ideas and words, and is currently moving towards risk management.

‘**Hazard**’ is synonymous with ‘source of risk’.

‘**Vulnerability**’ comprises ‘resilience’ and ‘susceptibility’. ‘Resilience’ is related to ‘existing controls’ and the capacity to reduce or sustain harm. ‘Susceptibility’ is related to ‘exposure’.

(EMA, 2000)

One strength of the English language is its rapid incorporation of new words, with their embedded new concepts. English, although fluid and adaptive, may not be the dominant world language within 50 years, overtaken by Arabic, or possibly Spanish or Hindi/Urdu, just by the weight of numbers of speakers (Graddol, 2004). Words and word groups change over time. Even having the right words or approaches in place as policy does not automatically guarantee community safety-oriented responses to disruptive warnings.

Since 1989 the Australian approach to cope with disasters has been prevention, preparedness, response and recovery training courses. Yates (1992) argued this all needs to be refined to make sure they are focused on issues from the relevant local communities. If locally delivered training courses do not contain local knowledge they may well be seen as remote and irrelevant to specific local regions. The current buzz phrase is 'story-telling' (Wall, 2006), of empowering community through informal links, fostered by community risk reduction programs such as Fireguard (Victoria) or community fairs.

Much of the problem of non response to hazard threats seems that 'the message' to take care does not effectively get through to the target. The signs, the words, the warnings may not have any impact. It is related to communication, with signals sent, signals received, and their interpretation.

The types of received and interpreted messages are explored specifically in Section 9 on risk communication. This section develops the intellectual foundation to more fully understand risk communication. We can consider the world full of signs we may interpret. The study of such things is called semiotics. The following two sections signpost the concepts and relevance of semiotics.

## **Semiotics - studying systems of signs or symbols**

Chandler (2005) explains semiotics in the following manner:

Semiotics could be anywhere. The shortest definition is that it is the study of signs. But that doesn't leave enquirers much wiser. 'What do you mean by a sign?' people usually ask next. The kinds of signs that are likely to spring immediately to mind are those which we routinely refer to as 'signs' in everyday life, such as road signs, pub signs and star signs. If you were to agree with them that semiotics can include the study of all these and more, people will probably assume that semiotics is about 'visual signs'. You would confirm their hunch if you said that signs can also be drawings, paintings and photographs, and by now they'd be keen to direct you to the art and photography sections. But if you are thick-skinned and tell them that it also includes words, sounds and 'body language' they may reasonably wonder what all these things have in common and how anyone could possibly study such disparate phenomena. If you get this far they've probably already 'read the signs' which suggest that you are either eccentric or insane and communication may have ceased.

Assuming that you are not one of those annoying people who keeps everyone waiting with your awkward question, if you are searching for books on semiotics you could do worse than by starting off in the linguistics section. It is ... possible to conceive of a science which studies the role of signs as part of social life. It would form part of social psychology, and hence of general psychology. We shall call it semiology (from the Greek *semeïon*, 'sign'). It would investigate the nature of signs and the laws governing them. Since it does not yet exist, one cannot say for certain that it will exist. But it has a right to exist, a place ready for it in advance. Linguistics is only one branch of this general science. The laws which semiology will discover will be laws applicable in linguistics, and linguistics will thus be assigned to a clearly defined place in the field of human knowledge (Chandler, 2005, p. 1).

Chandler (2001) had previously developed these ideas as follows:

Semiotics can be applied to anything which can be seen as signifying something - in other words, to everything which has meaning within a culture. Even within the context of the mass media you can apply semiotic analysis to any media texts (including television and radio programmes, films, cartoons, newspaper and magazine articles, posters and other ads) and to the practices involved in producing and interpreting such texts. Within the Saussurean tradition, the task of the semiotician is to look beyond the specific texts or practices to the systems of functional distinctions operating within them. The primary goal is to establish the underlying conventions, identifying significant differences and oppositions in an attempt to model the system of categories, relations (syntagmatic and paradigmatic), connotations, distinctions and rules of combination employed. For instance, 'What differentiates a polite from an impolite greeting, a fashionable from an unfashionable garment?' (Culler 1985, 93); the investigation of such practices involves trying to make explicit what is usually only implicit.

A 'text' (such as a printed advertisement, an animated cartoon or a radio news bulletin) is in itself a complex sign containing other signs. Your initial analytical task is to identify the signs within the text and the codes within which these signs have meaning (e.g. 'textual codes' such as camerawork or 'social codes' such as body language). Within these codes you need to identify paradigm sets (such as shot size: long shot, mid shot, close up). You also need to identify the structural relationships between the various signifiers (syntagms). Finally you need to discuss the ideological functions of the signs in the text and of the text as a whole. What sort of reality does the text construct and how does it do so? How does it seek to naturalize its own perspectives? What assumptions does it make about its readers (Chandler, 2001, p. 1)?

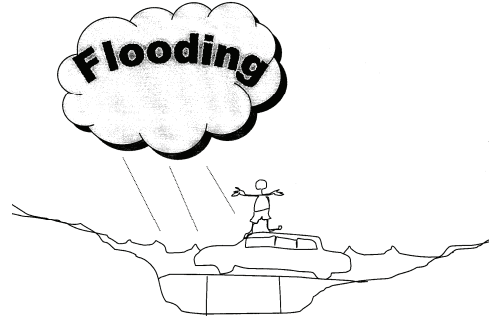
Within this intellectual frame of what is being represented and how, it becomes easier to understand how various authors on disasters approach the topic – what cultural signs and symbols they manipulate to try and get warnings of hazards and responses triggered.

The following five signs (Figure 8.1 below) have embedded meaning - in the right context they may trigger a behavioural response.

**Figure 8.1 Signs for life**



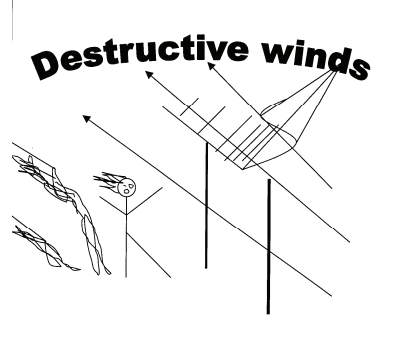
Conveying weather threat information - flood



Conveying weather threat information - fire



Conveying weather threat information - destructive winds



From WE Australian late 2003



From Townsville Bulletin, late April 2004

It has been acknowledged since the early 1990s that discussions on disaster-related language that the terms used and that the meanings or interpretations attached to those words have a real influence on the way people think and act.

## **Disaster definitions**

Even defining “disaster” is difficult (Salter, 1992). Some definitions gleaned from other sources include ‘extreme events located in time and space’ ... ‘extreme geophysical events greatly exceeding normal human expectations causing significant material damage and possible loss of life’ ... ‘any event which threatens people and requires extraordinary measures to protect life or property’ ... ‘the potential for damage that exists only in the presence of a vulnerable human community’, or the more currently accepted definition of ‘the interface between an extreme physical event and a vulnerable human population’.

A disaster may also be seen as a negative impact of a hazard on a community as measure of vulnerability. Vulnerability has certainly become a catchword as has hazard, preparedness, risk, response and recovery: all language of disaster impact mitigation evolved and practiced increasingly during the late 1990s (ie Zamecka & Buchanan, 2000). Salter (1992) points out that risk has increased during the early 1990s. Risk is seen as a function of probability and consequence, related to exposure and the level of force embedded in the threatening hazard. Salter was brave enough to draw a chart categorizing ignorance from pure ignorance to acts of ignoring.

Boughton (1992) points out that natural disasters are usually extremely rare for the individuals concerned but they can cause massive impacts. Because Australia is so vast, overall there are reasonably frequent natural disasters. However, in most locations they are rare indeed. Boughton (1992) argues that a “natural disaster” is a natural event in which the community life is seriously and traumatically disrupted. Insightfully Boughton (1992) says “it appears that a key step in preventing natural disasters is to prevent building damage (p. 4)”.

## **Example of internal spaces in conflict: rains preceding cyclones**

“Steady rain often precedes the arrival of a tropical cyclone so that soil profiles are saturated when the heavy rainfall occurs.” Boughton (1992, p 5).

When I hear about a cyclone impact threat, I first consider flooding preceding the landfall (Goudie & King, 1999) – it is part of my internal knowledge base, my internal reality or cognition. At conferences on such topics in the mid and late 1990s, it was difficult to convince emergency managers of this. It did not suit their semiotic landscape – it made their task too difficult. In the same way Aboriginal respondents ‘turned off’ when they heard ‘severe’ (because, seemingly, of the strong oral tradition and links back to the symbol-laden language of ‘severe punishment’ used consistently in the mono-cultural missions), emergency managers just did not want to know. It eventually took a ‘Senior Expert from Canberra, from the Australian National University’ (multi-symbol laden) to convince the managers. External reality stayed the same, their internal reality, their screens and filters through which they saw and judged the world had changed.

This knowledge of pre-cyclone flooding, epistemologically born of studying the records, and consultation with flood experts rather than emergency managers, means that there is a special issue for disaster risk managers considering threats from coastal tropical cyclones - populations may be isolated by dangerous flood waters well before a cyclone landfall with its associated highly destructive winds, pounding debris and possible drowning cyclone surge. This sequence of entrapment in coastal areas before cyclone strike needs special precautionary evacuation considerations. Since the early 1990s people like Boughton (1992) have suggested having drills/practice evacuations for schools and other institutions in readiness for possible earthquakes, cyclones or other hazards to which particular areas are vulnerable.

### **Use like examples of the threat from other instances**

Boughton (1992, p. 6) argues that “awareness of hazards and disasters can also be fostered by drawing attention to media coverage of hazards in other places.” This recommendation has merit. Imagine if the large scale floods and evacuation in Holland in 1995 (Handmer, 2000) had received widespread coverage in Australia, especially replayed at the beginning of necessary evacuation in some part of Australia. This could be done with the byline that there are large flood prone areas here where general evacuations are needed, or should be practiced, as a sensible response to an actual or simulated Maximum Possible Flood (MPF). The recent Dutch experience shows that the vast majority of evacuees – about 250,000 - were happy with that behaviour even though the worst of the threatening floodwaters did not inundate to the level feared.

Precautionary evacuations should be seen as wisdom within the context of Ecologically Sustainable Development; should be seen as good practices at the very least. An allied idea expounded by Boughton (1992) is that the media could give a high profile to success stories where communities successfully avoided disasters. Boughton quotes the 1989 example where tropical Cyclone Orson just missed Karratha in Western Australia. Because only boats were damaged Cyclone Orson was not considered a disaster.

Boughton (1992) makes the point that since 1974 when Darwin was largely destroyed by Cyclone Tracy, there have been major improvements in building construction thus enabling communities to be more resilient. The underlying point is that building construction and location may well be central to how capable a community is to endure an extreme natural event.

An issue of ‘attitude’ is shown in the inclination to hold practices and drills, especially on a broad scale. Inconvenience and possible insurance worries override the likely steep learning curve (epistemological development) associated with practices. One semi-desktop practice in Cairns in the late 1990s found that the counter disaster control centre was flooded with fairly modest rainfall. In the exercise of moving computers and other equipment, pandemonium ensued.



Practices are messy, but better than the real thing: wind, power outages and dark, to find failings with the drill. This is a matter of institutional attitude (see Figure 8.2, Stern et al, and the following to help comprehend sources of resistance to wide scale emergency practice drills).

**Figure 8.2 Stern's et al 1995 behavioural explanation model**

Behaviour is explained by:

1. a person's position in a social structure;
2. with constraints and incentives as generators of values, which lead to;
3. general beliefs;
4. world view;
5. specific beliefs and attitudes, generating;
6. intent, which helps explain behaviour.

Developed from Stern et al., (1995; p. 727)

## **Political ramifications: semiotics of real estate and vested interests**

Broughton (1992) explains some political ramifications:

A better-informed public is more likely to make the right reaction to proposed legislation and guide politicians at all levels towards making sound decisions for community survival. In many of the hurricane-prone regions of the USA, evacuation plans have been devised to remove people from areas at risk of storm surge flooding. The plans are well publicised and the routes well marked. In Australia and other parts of the USA where the same problem exists, some plans have also been made but they are hidden away for various financial and political reasons. This is a case in which attitudinal changes on the part of those communities may change the priorities of the decision makers and promote the interests of the community (Broughton, 1992, p. 4).

As early as the late 1970s, authors like Murray (1979) were expressing concern over issues like disparities where the poor often did not have equal access to resources:

...the poor do tend to suffer most when disaster strikes; here Bernhard Schaffer's concept of bureaucratic access strikes me as being very important: the poor don't know how to go about maximising the benefits to them of forms of aid that are made generally available, whereas the middle classes normally do have this know-how" (Murray, 1979, p. 2).

Murray (1979) reported that the first international disaster research meeting was held in 1978 in Sweden. Discussions and meetings have been held in a focused way for at least 25 years but there are still communication problems, including the disadvantaged, and having local councils ensure residential development does not occur in floodprone areas (Queensland Government, 2003).

## **The media can help**

The following from Handmer (1992) relates strongly to thrust of this research implementation: begin negotiations with media bodies and associations to become part of the formal warning process to target at-risk people. Action from the Bureau, State SES and EMA.

From:

Handmer J 1992. Can we have too much warning time? A study of Rockhampton, Australia. *The Macedon Digest*. The Australian Journal of Disaster Management V7: 2, 8 -10.

"The Rockhampton flood warning system"

"The outstanding feature of flood warnings in Rockhampton is the amount of warning time available. A week before the flood peak reached the city, the BoM was able to specify the height and timing with reasonable accuracy. This is possible because of the size of the Fitzroy River catchment; but also owes much to the Bureau's ability to capture and process stream flow data for the entire catchment and beyond. However, even without the Bureau's involvement, accurate warnings of a few days are possible." (p8)

"As a result of data from the gauge readers and synoptic reports, by 7.30pm March 2 the Bureau was able to refine its forecast predicting a flood peak at Rockhampton "about next Thursday 10<sup>th</sup> March". (p8)

Warning dissemination

"For example, forecasts are telexed from the Bureau's Brisbane Office to State emergency Services (SES) in Rockhampton, and then passed by hand to the local SES – the people actually combating flood. This appears clumsy but apparently works well in Rockhampton where time is not critical." (p9)

".. intense media interest can place added strain the emergency services, especially as some media organisations apparently telephoned the local SES every hour from 3am on. The absurdity of this is evident when we remind ourselves that the flood has over a week's lead time and a flat peak lasting a day or two." (p9)

By association, the hype may have reduced the credibility of local media. The reports also caused anxiety to out-of-town people with friends and relatives in Rockhampton. Many of whom telephoned the city to check on the situation, causing additional load on emergency workers and the telephone system." (p9)

"The flood warning literature emphasises the importance of avoiding this situation. But, it also appears that where multiple sources present the same story the result is powerful persuasion."

Conclusions

"As warning times increase, the official flood warning system is increasingly likely to find itself working in tandem with an unofficial system ... One way around the problem of multiple sources is to provide a central credible accessible information source. In Rockhampton the Council and emergency services attempted to do this." (p10)

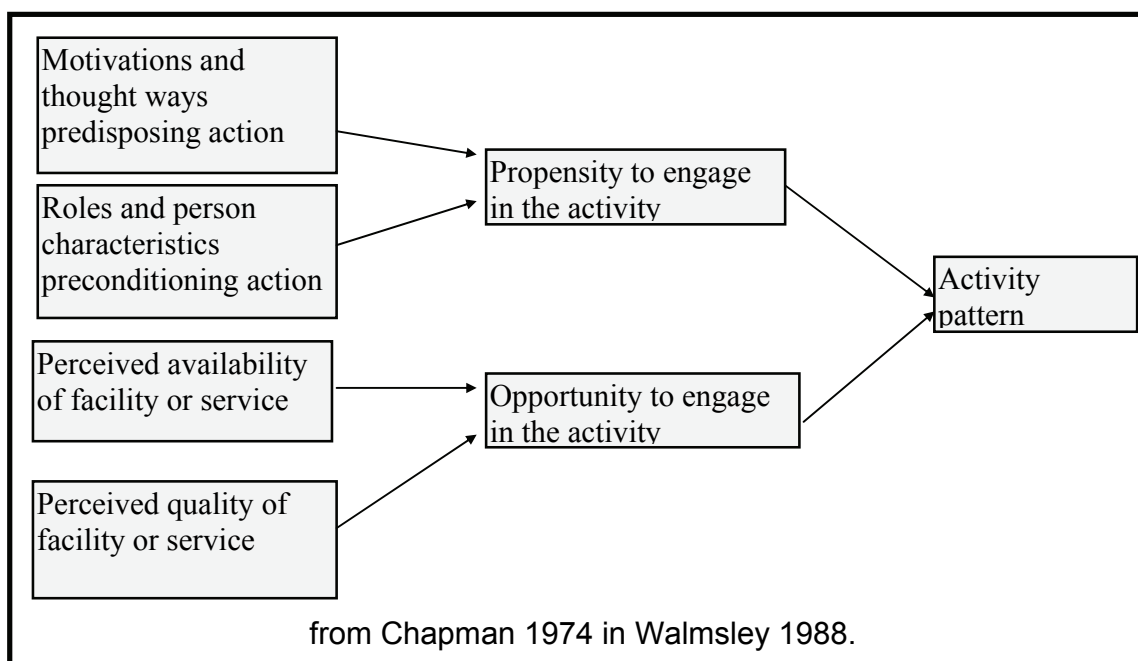
### Meteorological language detail

Salter et al (1993) point out that the use of meteorological category systems such as 'minor', 'moderate' or 'major' carry unambiguous information about the level of disruption likely from a particular flood. However, this is not true with the categorization of fire hazard, e.g. in south east Australia a 'high' forest fire danger is common, as is 'very high', although it is only 'extreme' fire danger which needs to cause protective action. Salter et al (1993) point out that the jargon categories of 'high' and 'very high' carry different technical meanings but are difficult to distinguish by many members of the public. The point here is that the language used should not be used for the convenience of the warning agencies. Rather the language used should be for conveying clear unambiguous messages to the general public.

### Why we do what we do

A behavioural model of causality to describe behaviour (Walmsley, 1988, Figure 8.3) may be used to infer relationships between reported attitudes and actual behaviour. However, a more recent and complex model proposed by Kitchin (1996), with the strength of explicitly including social and environmental interactions may be used to understand why we do what we do: Kitchin's proposed model includes a person's 'working and long term' memory. Internal information is processed within 'real world' context, such as cost (Stern, 1992), which may be processed within the 'it can't happen to me' frame, or considered against insurance payouts as a processing cognitive or 'internal space' of subjective reality.

**Figure 8.3 Possible determinants of activity patterns**



Stern et al. (1995) have developed a simple and elegant model which includes a person's position in a social structure, considers constraints and incentives as generators of values. This in turn leads to general beliefs, world view, specific beliefs and attitudes, generating intent, helping explain behaviour (Stern et al., 1995). This model perhaps helps explain why there is such a strong sense of self-help in the remote communities – elders decide responses to threats, there are historic and immediate constraints, generating a value system where community members need to look out for each other (consider the traditional stories in [http://www.tesag.jcu.edu.au/CDS/Pages/reports/Gou\\_IWWRpt/index.shtml?id=23](http://www.tesag.jcu.edu.au/CDS/Pages/reports/Gou_IWWRpt/index.shtml?id=23) – the punishment when people do not look out for each other). General beliefs all must point to self help, including needs to ensure safety, and the intent to achieve community safety, leading to safety-centred behaviour.

Each community visited was not greatly concerned by extreme weather (values) but each relied on and respected their tradition reading of threats, and information from the Bureau. The world view is that flooding or worse may happen, and that the Bureau will provide adequate warning. There are specific beliefs about what should be done in the face of threats. For instance, on Palm Island, SES persons use a motor boat to go out to every island camp if a destructive weather warning is posted by the Bureau. The community has the intent of protecting all its members.

The Bureau gets it right often enough to take their warnings seriously. This is the correct behaviour of the Ecologically Sustainable Development (ESD) precautionary principle in action. In Oombulgurri in Western Australia, after devastating floods requiring evacuation in the late 1990s, the community has rebuilt on the same location it has occupied since its inception as a mission in the 1930s, but all community buildings are now more than a metre higher above the flood level. The proposed new youth and recreation centre is on higher ground, and purpose designed as a safe shelter from flood or cyclone.

## **Paradigms**

Human geography attempts to “... understand how socially generated constraints influence virtually all forms of people-interactions ...” (Walmsley & Lewis 1993, p. 6). From Federal Government initiatives in 1990, Australia has engaged in a public participation process, developing concepts and implications of ecologically sustainable development, and how to implement them.

## **Changing values and roles**

In an attempt to understand why we support or ignore certain messages relevant to our safety, the following section considers paradigms, particularly the Dominant Social Paradigm and the New Environmental Paradigm.

Concepts of paradigms have been developed to help appreciate the societal values that underscore social choices. Exploration of paradigms is increasingly used in the literature, as outlined below, to help understand why we interface with

nature the way we do, and how that interaction is conceptually changing the way we approach community wellbeing and community safety.

A paradigm may be defined as a clear and embracing pattern, a coherent world view, “a mental image of social reality that guides expectations in a society” (Dunlap & Van Liere, 1978, p. 10). “The DSP (dominant social paradigm) refers to the world view or ideology which has become entrenched as a result of the structures of power in a society. It is diffused through society by hegemonic values [structural values where gross imbalances of power and wealth are accepted as normal] between society’s members, institutions and social processes and, in turn, is maintained and reproduced by them” (Fien, 1992, p. 23).

There is a chasm between the dominant social paradigm (expansionist or continual growth world view), the entrenched “structures of power in a society ... maintained and reproduced by them” (Fien, 1993, p. 23), and the new environmental paradigm.

### **Dominant Social Paradigm - values**

Since development of mechanised power, growth and innovation has brought wealth and technological benefits to increasing numbers of people. Unfortunately, it is largely based on growth and exploitation. An alternative world view exists: the new environmental paradigm. This sustainable world view includes long-term ecological and resource considerations, and accepts the urgent need to reduce human impact on surrounding resources and ecosystems. Both these world views are coherent (Munro, 1995). The dominant paradigm does not attempt to include all of the ‘external’ costs of any human endeavour, while the environmental paradigm does attempt to cost resource depletion, pollution, health effects, and all other costs which are attributable to a particular behaviour.

Ecologically sustainable development expresses a ‘world view’ or paradigm which is one of two major driving forces in our society. The philosophies of ESD – equity, precaution, environmental and social responsibility, but mainly a long term view of what is most likely to work for us, are necessarily all part of one inseparable package. This is the full context of the Bureau seeking to improve effective responses to the weather information they gather, interpret and disseminate.

With this articulation of what are the underlying forces or philosophies at play, and the policy shift toward safe, self-helping communities, the goal becomes one of selling self-help techniques and information to communities. Social marketing is likely to be the most effective vehicle.

## Social marketing

From: [http://foundation.novartis.com/leprosy/social\\_marketing.htm](http://foundation.novartis.com/leprosy/social_marketing.htm)

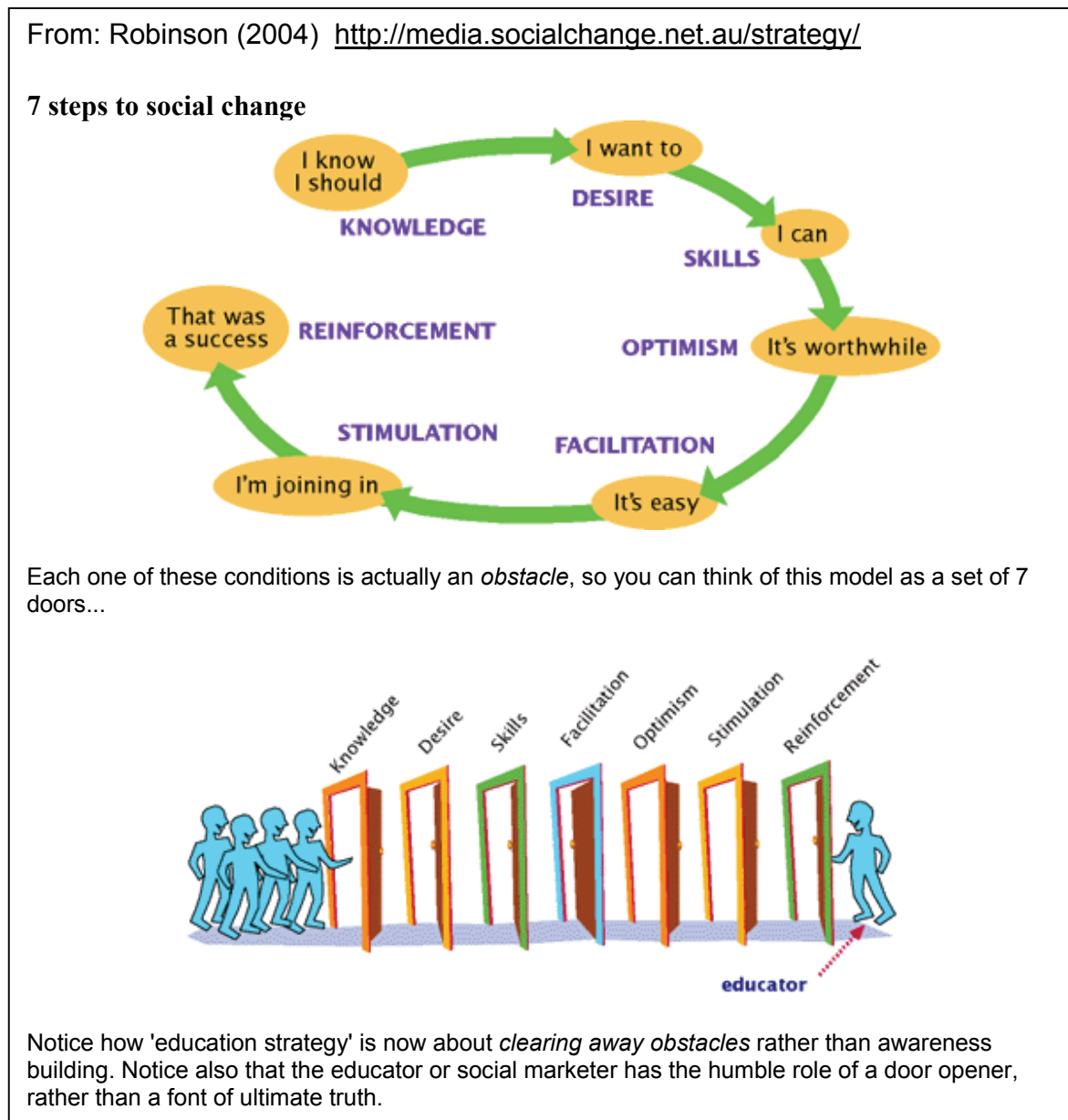
### "Social marketing's product: ideas and practices"

Social marketing is distinguished by its emphasis on so-called non-tangible products-ideas and practices-as opposed to the tangible products and services that are the focus of commercial marketing.

An integral part of ideas are beliefs regarding certain issues and the way they should be dealt with. These beliefs range from general world views (of religions, for example) to culture-specific notions (such as a "dowry system") or identification with a group ("we as employees of the Novartis Foundation"), to a person's self-image ("I as a committed environmentalist"). Ideas also include attitudes toward people, things, concepts, or events. Our approval or disapproval of them depends largely on our individual value premises.

Individual and societal behavior, exemplified by actions (as well as failures to act), is largely conditioned by whether we are pragmatic or act on the basis of values, tradition, or emotions. Pragmatic behavior considers the purpose, means, and consequences of a course of action or non-action, whereas value-oriented behavior rests on ethical, aesthetic, religious, or other considerations regarding the intrinsic value of a certain mode of conduct without regard to the consequences. The traditionalist acts in accordance with institutionalized norms and practices, while emotional behavior is shaped largely by moods. Therefore social change can best be effected by bringing about new ideas and beliefs and thereby behavior."

**Figure 8.4 A graphic how-to of social marketing**



This section provides some of the intellectual tools needed to solve problems relating to community safety in remote Aboriginal communities – definitions of 'disaster management', words used, and consideration of the importance of people's 'internal space' as to how we see and are inclined to react to the external world. This section has explained, briefly, how we acquire knowledge (for us, knowledge about potentially disruptive weather), and the intellectual platform (social marketing and semiotics) to help influence the message content of predicted disruptive weather, flood or bushfire, aiming to stimulate a proactive response of flight or fight - leave early ahead of the predicted threat, or make sure you and yours are in a safe place.



## Section 9 Risk communication

A rich literature on risk communication ranges from a fine body of theoretical and practical considerations about the nature of communicating risk to rather scathing and detailed attacks on the self-serving way the media has previously used disasters. The following literature review and extracts on risk communication require little comment. Recommendations in

[http://www.tesag.jcu.edu.au/CDS/Pages/reports/Gou\\_IWWRppt/index.shtml?id=23](http://www.tesag.jcu.edu.au/CDS/Pages/reports/Gou_IWWRppt/index.shtml?id=23) explore the media links in more detail, based on the recommendation that the 'risk communicators and managers' seek to formally work with the media as an exercise in social benefit.

The literature makes clear a questioned assumption that the communication process is intentional and that the flow of information from the communicator to the target audience is the core communication task; that desired behaviour will emerge from that successful communication, and that all that really matters is communication techniques (Kasperson & Stallen Pieter, 1991). Humans tend to be irrational, optimistic and hear what they want to.

Communicating risks is old, researching that communication was seen as new in 1991 (Kasperson & Stallen Pieter, 1991). From 1993 'action statements' (what the at-risk person, family or community should do to minimise damage) are seen as central to the whole purpose of the disruptive weather warning (Salter et al, 1993).

Like many other sources, Salter et al (1993) details the issues of risk communication messages in terms of: content, clarity, understandability, consistency, accuracy, certainty, frequency, channel, credibility, public participation, ethnicity, age, gender, roles, responsibility, elements, sequencing, synopsis, prognosis, location, action, warning timing, and action statements.

To have any chance of 'success', warnings need to have meaning which is shared between those who draw them up and those for whom they are meant to inform. They must also appear relevant to the individual decision-maker. This is no easy task given the distinctions between scientific-technological organisations and the "public" (Handmer, 2001). It is not a case of saying: "a category three cyclone will pass over coastal town X" It is more a case of making sure the members of town X hear that message, and feel moved to take risk-minimising actions.

A complete and probably final intellectual framework to risk communication is provided by Rohrmann, reproduced in the following Tables 9.1 to 9.4 (Rohrmann, 2000). There are many more risk communication-focused web sites, some listed in the Appendices.

The following model (Figure 9.1) identifies a set of message features (e.g., content clarity and acceptance), person characteristics (e.g., prior experience, cognitive biases, attitudes), social influences (e.g., peers, media) and context factors (e.g., societal safety culture) which determine whether, and if so, how a particular risk communication regarding a hazard (i.e., a health & safety threat) influences individual risk assessment and management (i.e., risk appraisal, decision for preventive action and actual risk behavior and disaster preparedness). Three overlapping processes need to be considered and linked: how people deal with hazards, how risk information is processed and evaluated and how accepted information affects risk perception, evaluation and behavior. As interactive risk communication is far more likely to be effective, two-way communication pathways are looked at as well.

A comprehensive model of the risk communication process is indispensable for several reasons: It may be utilized as a heuristic for designing respective programs, for measuring and assessing campaign outcomes, and for identifying barriers to risk awareness and attitude or behavior change. The presented framework can be elaborated and specified with regard to the problem type, the target audience, and the relevant attitudes and behaviors to be dealt with. It has proven useful in several studies about technological hazards as well as natural disasters. Further applications to different kinds of hazards and a variety of risk communication techniques would be worthwhile in order to explicate the soundness of the suggested socio-psychological approach to analyzing risk communication.

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### A socio-psychological model for analyzing risk communication processes

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## 1 - Facets of risk information and communication

### 1.1 - Tasks, types, means, situations

Communicating about hazards and the involved risks for humans and their assets is a commonplace activity which occurs in a multitude of 'arenas', ranging from systematic campaigns planned by authorities to informal exchanges in occupational or private contexts. The notion of risk communication (RC) refers to a social process by which people become informed about hazards, are influenced towards behavioral change and can participate in decision-making about risk issues. Usually this happens in a context where risk awareness and preparedness are to increase; however, sometimes the aim is to reduce concern about risks.

Main types of RC are listed in Table 9.1. The aims of RC involve information, communication, education and management tasks. Many different means and procedures are used, depending on the demands of the RC situation.

## 1.2 - Actors and audiences

Risk communication processes involve a variety of 'actors' which may be senders, audience, or both. In addition to various risk-exposed people (employees, residents, consumers) and public authorities, further actors in the RC 'arena' are to be considered (cf. bottom of table 1), such as industry, scientific institutions, and various types of media; this alone makes RC a complex process.

Informing and communicating about risks is more likely to succeed when treated as a two-way process, when participants are seen as legitimate partners, and when people's attitudes and 'worldviews' regarding environment and technology are respected. This is particularly true in the case of risk controversies. Acceptance of risks is not an information/ education issue, it results from a societal discourse (Cvetkovich & Lofstedt 1999, Susskind & Field 1996, Wiedemann & Schuetz 2000).

**Table 9.1 Rohrmann's components of the Risk Communication process**

### Primary types of risk communication aims

Identifying unknown/difficult/controversial risk aspects (inducing RC problems)

- Advancing/changing knowledge and attitudes regarding hazards & risk-taking
- Modifying risk-related behavior of people exposed to hazards
- Promoting community participation in hazard mitigation
- Facilitating cooperation and joint conflict resolution regarding controversial risks
- Developing disaster preparedness and emergency management

### Communication means & channels

- Print material (e.g., fliers & brochures), distributed by institutions/agencies
- Product information, machine operating instructions, etc
- Public information services, 'hot lines', etc
- Educational video/film/computer products
- Info presented via broadcasting, television, newspapers, journals & the internet
- Expert presentations (at meetings, public hearings, trainings, drills etc)
- Warning sirens (or messages through mobile loudspeakers)

<b><i>Situations/'arenas' in which RC occurs</i></b>	
	<ul style="list-style-type: none"> <li>• Information campaigns by authorities</li> <li>• Fulfilling 'right-to-know' legislation</li> <li>• Public hearings, conferences etc</li> <li>• Judicial proceedings</li> <li>• Counselling contacts, medical advice</li> <li>• Safety training courses, tests, exercises</li> <li>• Advice for handling disaster impacts</li> <li>• Evacuation</li> <li>• Private situations (e.g. in families)</li> </ul>
<b><i>Target audiences and actors</i></b>	
	<ul style="list-style-type: none"> <li>• Risk-exposed people</li> <li>• Industry/manufacturers/companies</li> <li>• Scientific institutions</li> <li>• The general public</li> <li>• Administrative/regulatory authorities</li> <li>• Journalists/media</li> </ul>

**Table 9.2 Rohrmann's main components of the risk communication process**

<A>	HAZARD	The hazard (situation, event or substance) to which the people targeted in a RC process are or might be exposed to (i.e., a threat to health and safety)
<B>	RISK APPRAISAL (OR RE-APPRAISAL)	Awareness of hazard and acknowledgement of personal exposure; risk perception and evaluation (assumed probability, duration, severity, proximity, immediacy etc of impacts)
<C>	DECISION FOR PREVENTIVE ACTION	Choice between: risk-reducing behavior, new information search, no action (based on retention of received info)
<D>	RISK-REDUCING BEHAVIOR	Avoiding exposure or getting prepared for impacts (individual behavior and/or participating in group/community programs)

<E>	RISK COMMUNICATION MESSAGE - CONTENT	Message characteristics: argument strength, relevance, accuracy, clarity, etc.; focus: knowledge/attitude/behavior-focussed
<F>	CONTEXT OF RC	RC Source: type of institution, expert status, credibility; features of information distribution; social process of RC; "channel" characteristics (eg, brochures, TV/radio, print media, videos, www, "hotlines", personal presentations); constraints of the acting agency; also, interference with other information sources
<G>	CONFIRMATION EFFORTS	If information received and noticed: attempts to cross-check & validate the RC content (via same or more likely other sources), dependent on individual information needs
<H>	APPROVAL OF HAZARD MESSAGE	Personal acceptance of the message regarding the nature of the hazard and the involved risk for oneself
<I>	JUDGING EXPECTED UTILITY OF PROPOSED ACTION	Assumed effectiveness of the proposed measure to mitigate the risk (based on perceived difficulty, feasibility, costs and availability of alternative means of protection)
<J>	COMMUNITY / SOCIAL ENVIRONMENT	J1: attitudes and behaviors of family members, friends, colleagues etc. J2: social influence or pressure within one's social/cultural/political context
<K>	PERSON: CONDITIONS OF EXPOSURE	Actual exposure (intensity/frequency); reasons for exposure (e.g., voluntary/non-voluntary or occupational/private); personal experience with hazard; vulnerability (person and/or assets)
<L>	PERSON: RISK- SPECIFIC BELIEFS	Mental model of hazard; personal relevance of risk issue; belief in controllability; optimism bias; perceived benefits of risk source; risk propensity/aversion
<M>	PERSON: GENERAL INDIVIDUAL CHARACTERISTICS	Age, sex, education, health, etc.; cognitive abilities; interests; resources (time, money)
<N>	PRIOR BELIEFS REGARDING MEASURES	Knowledge and acceptance of risk mitigation measures (cf. <I>) held by the RC addressees <i>before</i> the current RC process

<O>	PRIOR RISK PERCEPTION	Existing hazard perception and risk appraisal (cf. <B>) <i>before</i> current RC process
<X>	RISK/SAFETY 'CULTURE' OF SOCIETY	General views held in society about the significance of risks and relevance of individual health & safety
<Y>	INSTITUTIONS FOR RISK/SAFETY/HEALTH MANAGEMENT	Public authorities and/or companies responsible for the health & safety of people (residents, employees, consumers etc) and therefore dealing with risk management

Several conceptual distinctions are important:

- The core process, an individual's risk evaluation and safety management in response to a hazard <A>, is divided into three steps: risk appraisal <B>, decision for preventive action <C>, and risk-reducing behavior <D>. In terms of stress theories, this includes two considerations: threat appraisal and coping appraisal).
- The content of risk information <E> is distinguished from contextual factors <F> of risk communication campaigns (the RC source and its credibility being a particularly important context condition).
- Evaluating risk information involves two separate steps: Acceptance of information about the hazard (its features and the likelihood and severity of adverse impacts <H> versus the subjective utility of proposed preventive actions <I>).
- Usually people already hold views regarding the risk matter - thus prior beliefs regarding risk characteristics <N> and mitigation measures <O> and those after the campaign <B, H, I> need to be studied.

The full model is presented as Figure 9.2.

The proposed causal links between the variables are indicated on a global level only, that is, for sets of related aspects of the risk communication process. (Note that 'feedback loops' are assumed as well but not fully outlined here).

Figure 9.1 Rohrmann's risk communication model – process framework

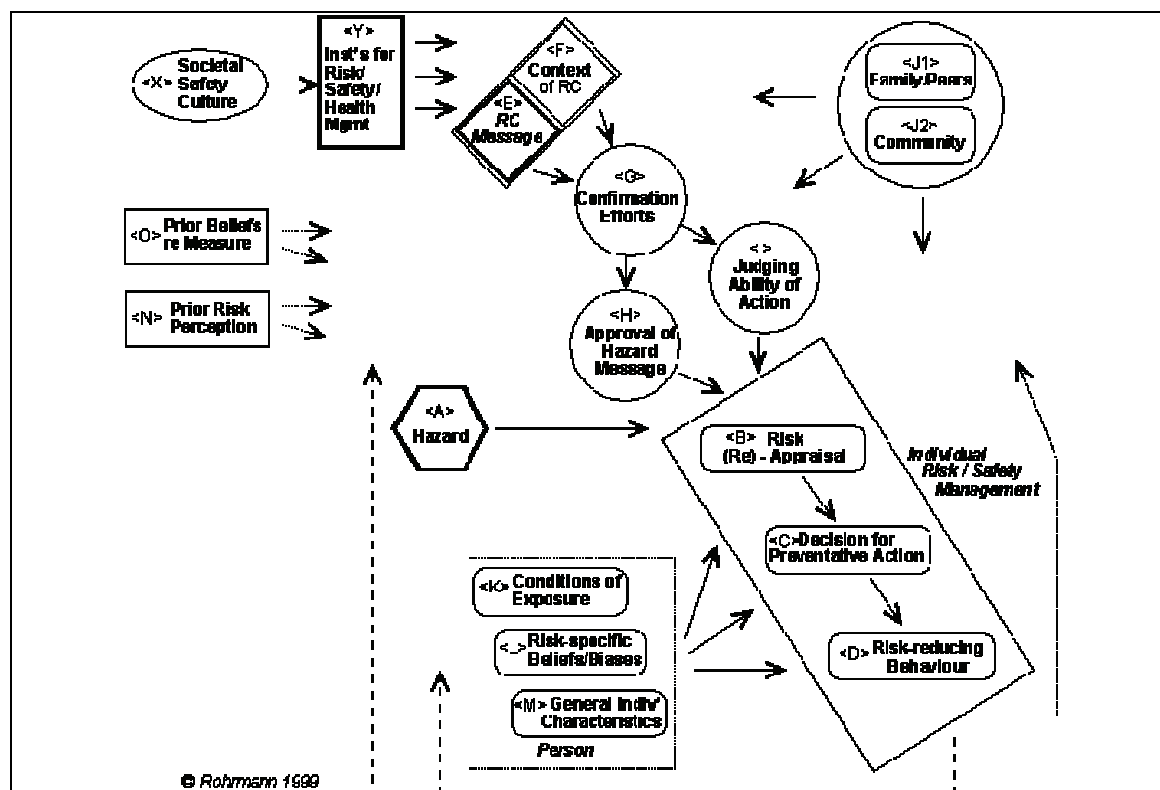
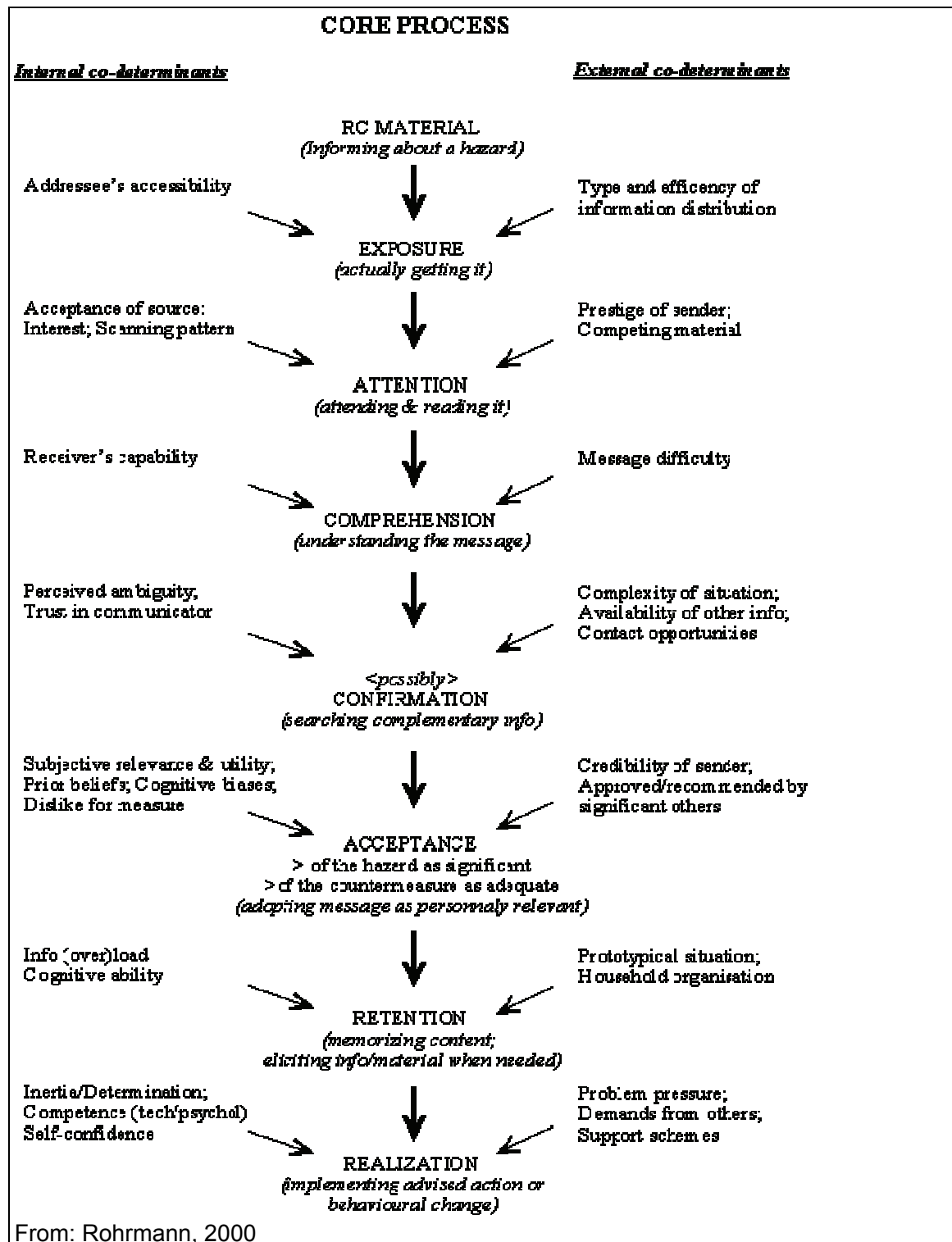


Figure 9. 2 Rohrmann's 'Informing about the risks from hazards:  
'A framework for the information behaviour link'





## **Credibility and trust in risk communication**

From the 1980s onward credibility of the information and the risk communicators has been seen as central to effective risk communication (Renn & Levine, 1991). A long identified core issue is that there are many groups competing for credibility in the communication process. Since the early 1990s it has been seen that high credibility sources produce the most behavioural change - status matters.

The more explicit (message as a verb, the more 'persuasive intent') the better. People tend to respond to perceived fairness as much or more than they respond to apparent objectivity. Lending argument to other approaches is seen as more effective risk communication than just arguing for one line of response. If the goals of the communicator are seen to serve a common interest with high social values people are more likely to trust the embedded messages. In the end the sources do not necessarily have to be liked. It is the actual positive and understood outcomes of the communication message which matter the most (Renn & Levine, 1991).

Handmer (2000), particularly focused on flood warnings, makes in-depth links between different authority knowledge sources, impediments to effective warnings and the upgraded role the media can play as credible sources of information in risk communication. Handmer discusses some of the less obvious ways passively receiving a lucid warning may allow urban development in high-risk areas, and may encourage some high at risk people to ignore 'action warnings' in the hope of deriving insurance or other material benefits from being 'caught' in the hazard.

## **Effective warning**

Handmer (2001) provides some details on flood warnings.

We should conceptualize a warning as a task focused only on the needs of people at risk. Flood detection and prediction systems are of no value if they do not result in appropriate action. So flood warnings are intended to signal those at risk to prepare for flooding both physically and psychologically.

Physical preparation would be to complete any travel to move flood sensitive equipment to safety and putting loved ones and pets in a flood free, safe environment. Psychological preparations may be triggering support networks and helping assure people where there is safe shelter and the likely limits to the floodwater.

Informing all vulnerable people in a "total flood warning system" involves many groups and activities. Indeed there are many communities and many organisational groups. All of the groups need to work together to minimize damage and loss of life.

A flood warning turns a prediction or forecast into information in the form of an action statement. The purpose is to improve safety and reduce damages. They do this by communicating information to those at risk to take action to improve their safety and reduce damages: to enable "individuals and communities to respond appropriately to a threat in order to reduce the risk of death, injury, property loss and damage." (BoM and AEMI, 1993).

Warnings provide an approach to risk management that allows the risk to be taken. Development may occur in flood prone areas or in areas subject to other periodic and predictable hazards because warnings will (or rather should) trigger appropriate safety and damage reducing behaviour<sup>12</sup>.

A starting question for those designing and delivering warning messages is "what do those at risk need to know to reduce damages and improve their safety; and what is the best way of ensuring access to that information?" A detailed understanding of the community at risk and their warning needs as a prerequisite for implementation has long been a theme of the general risk communication literature (see eg Handmer and Penning-Rowsell, 1990; Vaughan, 1995).

It is difficult - if not impossible - to answer questions about local needs, priorities and access properly without consulting the people involved. The consultation should be a two-way process, more akin to negotiation, with the various stakeholders discussing their perspectives on the flood risk, and approaches to managing it.

In many areas local people may be unaware of the risk - a perception that will influence their response to warnings. The development of shared meaning through a negotiative process is consistent with the evolution of practice in risk communication generally towards the development of partnerships (Fischhoff, 1995). Fully shared meaning cannot be achieved without a thorough understanding of the population at risk.

From: Handmer, 2001

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<sup>12</sup> In contrast to the possibility that an efficient and reliable warning system may just be a clever way for councils to allow urban development in vulnerable flood areas, the Queensland Government introduced a Planning Policy in 2003 to specifically exclude development in flood or fire-prone areas.

### **Philosophy for policy review: crying wolf or worse – applying the precautionary principle.**

From the 1990s a strong issue of debate in risk communication has been “the right to know” (Barum, 1991). Some disaster managers try to minimise alarm, claiming that by generating false alarms, there will be ‘concern fatigue’, and so they tend to delay alarm. Unfortunately, with long lead times and unpredictable weather, sometimes leaving things until it is clear there will be major human impacts may be too late to act effectively. Escape routes may be flooded, or too narrow to allow mass transport of a panicking population (Goudie & King, 1999).

The ‘precautionary’ approach is supported by the Economic Commission for Asia and the Pacific (ECAP), the World Meteorological Organisation and the Red Cross Societies. The alerting of the community and its responsible authorities must begin, at least provisionally, as soon as the existence of a tropical cyclone over the seas bordering the country is known“ (ECAP et al, 1997 p. 16). According to ECAP et al, the warning challenge is less clear for predicted localised downpours and flash flooding – how much effort should be taken to warn – what is the message, how do you keep it to the affected area, and what do you want people to do? These sorts of questions echo in Australia after the major hail damage in Sydney in April 1999, or the flash floods in Melbourne in December 2003.

### **Precautionary evacuations**

Handmer (2001) reports an evacuation of 250,000 Dutch ahead of a flood threat in 1995. Eighty-eight percent of people surveyed in broad post-emergency surveys “believe that evacuation was appropriate.” (van Duin et al 1995 in Handmer 2001, p. 24). In part this may be because of floods experienced two years prior. Good skills in dealing with the mass media appear to have helped in the effective precautionary evacuation.

### **Jargon or language detail**

A recurrent problem in Europe is that warning messages are often written in jargon. For instance, in Britain colour coded warnings appear understood by few. If there are ambiguous official warnings people will seek informal information. That information may undermine the formal information implying that the informal information networks should be consciously used by warning managers. (Handmer, 2001)

Salter et al (1993) point out that the use of meteorological category systems such as ‘minor’, ‘moderate’ or ‘major’ carry unambiguous information about the level of disruption likely from a particular flood. However, this is not true with the categorization of fire hazard e.g. in south east Australia a high forest fire danger is common as is very high although it is only ‘extreme’ fire danger which needs to cause protective action. Salter et al (1993) point out that the jargon categories of ‘high’ and ‘very high’ carry different technical meanings but are difficult to

distinguish by many members of the public. Language used should not be for the convenience of the warning agencies. Its function is to convey clear unambiguous messages to the threatened public.

### **The politics of risk communication**

Risk communication is often laden with values and political implications. For instance it has been argued that the reason for not having detailed local cyclone surge inundation maps made available at the corner store level in Cairns is that such information may have a negative impact on local land prices. This is more a political decision than an attempt at effective risk communication.

### **Recommendations for the design of effective warning systems: findings from the research literature**

Handmer (2001) explains in relation to warning messages and systems.

Warning messages should:

- be timely and reliable;
- have local and individual meanings;
- be forward looking;
- suggest appropriate responses;
- come from locally credible sources;
- be reinforced socially (e.g. through personal networks);
- go to those at risk (usually a diverse group).

Warning systems should:

- make provision for easy confirmation and extra information;
- use an appropriate range of message dissemination modes;
- employ multiple channels for dissemination;
- incorporate continuous learning and updating procedures.

### **Warnings**

People at risk need to know how to minimize impacts from a threat. The task is how to deliver that information. As has happened in the Indigenous weather knowledge research, it cannot be done properly “without consulting the people involved. Such consultation should be a two way process more akin to negotiation.” (Handmer, 2001, p. 22)

### **The medium**

Public address systems may be used where available either fixed in public institutions or in vehicles. These are most effective if used on populations without other ways of receiving the warning or during the night when most people are asleep. From moving vehicles it may be difficult to hear all the message (Sorenson & Mileti, 1991).

## The media roles

The tension between what is newsworthy and what is 'reality' remains. Lichtenberg and MacLean (1991) argue that the press should never attempt to be a neutral transmitter but that the press should remain self-aware.

Much is known, from systematic social science research done over the last 50 years, about the role and activity of the mass communication system (MCS) in natural and technological disasters. Among other things, studies have shown, first, that the MCS is a subworld of its own (with distinctive norms, values and beliefs not shared with the larger society), and second, that this system does not simply mirror or reflect the world.

News stories tend to be framed or structured in particular ways. For example, there is a strong tendency to frame stories in a conflict framework. Thus, a recent study showed that 30 per cent of all news stories present news through a combative lens (eg clear-cut conflicts, winners/losers, rivalry, etc

For most people, at least in societies where there is a very developed MC system, that system provides the most as well as the most salient information about risks, hazards and disasters. Individuals seldom acquire that knowledge from personal experience. The MC system constructs that reality for most persons, including emergency managers, disaster planners and crises decision makers." (p 9)

Accompanying an ever increasing diversity of who and how, and also what is reported, is an ever increasing differentiation into specialized audiences. Part of this is the result of the existing ethnic and minority differences in American society, but some is the result of the growing diversity in that society, which in turn is the result of changes in lifestyles (eg among adolescents, who are split into many subgroups who expose themselves to rather different MC outlets). Overall, we are therefore faced in the future with ever more segmentation and differentiation, and basically a move toward ever more heterogeneity in MC systems (p 10).

...of 32 small radio stations, only 58 per cent pre-empted regular programming, as compared to 83 per cent of the large stations and 100 per cent of the 12 medium-sized stations. Furthermore, only 45 per cent of the small outlets and 50 per cent of the large stations increased their news staff in order to cover the disaster, while 91 per cent of the medium-sized stations had an increase in personnel. Finally, only 41 per cent of the small stations and 50 per cent of the large ones actually sent reporters into the field to report the disaster occasions, while 91 per cent of the medium-sized outlets did so" (p 12).

So unlike the handling of most news stories, news about disasters forces organisational change. Thus, this is an atypical situation for the reporting of news” (p 12).

“An earlier DRC study on radio stations suggested that gatekeeping is truncated during disasters, with news processing being simplified and some of the usual editing steps and stages skipped. The more recent research indicates that the previous finding of a truncated gatekeeping process is primarily true for the electronic organisations. In both radio and television stations there is considerable increase in the amount of live coverage during disaster occasions, with news stories not going through the everyday filtering process.” “So the MC organisations not only change their structures during disasters, as we indicated earlier, but they also modify some of their central processes. The lessening of gatekeeping almost insures that there will be more factual errors and incomplete information in reports about disasters than in more routine time stories.”

“Disaster coverage is massive. In one DRC study, local newspapers examined in nine communities struck by a disaster found the range of coverage was from 44 to 169 stories, with an average of almost 90 concerning the disaster in each newspaper. Of these news accounts, 33 per cent appeared on the front page and 55 per cent within the first three pages. In addition, a total of almost 700 photographs accompanied the 904 stories.

In another DRC study, which did not include all MC outlets, we examined the coverage of the radio and television stations in the community. The local television stations produced a total of 175 reports during the first two days, or about 44 reports each day per station. In both cases normal programming was pre-empted, and the disaster was given very extensive coverage. Radio coverage, during the first two days, totaled 134 reports, or about 34 stories per station” (p 13).

“Radio in particular gets differentially involved. In fact, very typically, only a minority of stations provide special disaster coverage. One DRC study found that 19 per cent of all stations did not cover the disaster in their own community (either going off the air or continuing with normal programming). Another 30 percent never pre-empted local programming, and 28 per cent did not increase their normal allocation of time for news” (p 14).

“...citizen sources are employed more than usual, and used in different ways by newspapers and radio/television organisations” (p 15).

From: Quarantelli, 2002

This section has shown that risk communication is complex, competing against many values, predispositions and distorting lenses. Rohrmann’s fine explanations basically say that we may tell the target (at risk) population, but they may not hear.

When they hear, their interpretation may be at odds with the intended content of the message. Authors such as Handmer and Salter et al, make clear that confused motives will produce confused outcomes, and many of the 'risk communication' authors explore ways the media could help, but often undermine the 'call-to-action' communication of the risk warning. Warnings are needed in plain English, with clear graphics of the threat, embedding safety-oriented recommended behaviour from reliable, trusted sources. Warnings should be able to be discussed and reinforced with information from other sources. This is most likely to produce safety-oriented behaviour, with the constrained and clear assistance of the media.

Given the fraught nature of risk communication, the following Section 10 provides the discussion which helps develops a way forward for NESH to be in the awareness and information loop so they can mobilise ahead of fire or other threat to maximise their safety.

## Section 10      Discussion

This brief discussion summarises and reflects on the methodology developed and tested in the research, and considers findings from the visited community representatives and groups, and related literature on language and human understanding, including specific issues of risk communication. The research aims have been fully met, identifying that use of Multicultural organisations as identified care-providers for NESH as a 'special needs groups', so that any preliminary disaster preparations will include contact by the managing body (of example, the Local Disaster Management Group in Queensland), ensuring that 'community leaders are notified, who then notify their community members using the ubiquitous mobile telephone ownership identified in this research. Other encouraged 'informal' means of encouraging local residents or friends and family of those in a potential bushfire threat, like all community members, are encouraged to let NESH know of the looming threat, what their choices are, and where to find out more information – ideally through their activated MCO, acting as a financed multi-lingual local disaster information call centre.

The methodology of asking target groups what they know and what they need to know should become core approaches to all applied social research. Representatives of emergency services organisations from two states have sought use of the developed research instrument and approach, implying a successful methodology.

Having sought feedback from the visited group organisers the appended reports were finalised, the true test of this research will be the level to which the recommendations are adapted and adopted.

Along with the recommended development of Action Visual Warnings through the Bureau, EMA and others (more graphics and less words – the graphics to include detailed simulations of likely fire movement), outcomes of this research should have a wide application and role in minimising loss through extreme weather impacts across broad reaches of Australia.

Literature reviewed in this report shows that there has been a recognised need to improve risk communication and response in remote Aboriginal communities, and to some detailed extent, how to do this, since 1998 (EMAI, 1998). Details of problems of great isolation, minimal populations, limited employment and massive costs for travel, transport, infrastructure and consumables associated with remote communities are also well understood (EMA, 2002).

The 18 community group meetings held gathered first-hand information and provided clear feedback, showing that Bureau information was sought and appreciated. Apart from their own observations, the evening television news or phone calls from their community group members were the most likely first way that community members hear of looming weather threats.



## **Learning from practitioners and the past**

The summary of the 2003 Disasters Conference held by EMA in Canberra shows that most of the 1974 lessons have been learned, but 30 years on, planners and emergency managers are still grappling with what social capital may mean, caught often between political concerns over unduly alarming people, including tourists with their dollars, and faced with warnings as a marketing exercise, for which they have no training.

The purpose of the research and this report is to improve the weather warning information into NESH to minimise loss from flood, cyclone, windstorm or fire. The research found community members with a very poor appreciation of natural hazards in Australia, and little comprehension of what to expect or what to do.

## **Words and images**

Word and image use are critical to effective communication. A newspaper graphic (Figure 10.1 below) conveys much about the world we now occupy. The image contains no words. The need for clear palatable messages which are most likely to provoke a precautionary response are supported both by communication and cognitive theory of Section 8, and the risk communication literature of Section 9. If this knowledge is melded to the research task, goals and feedback, clearer words and images will become the norm.

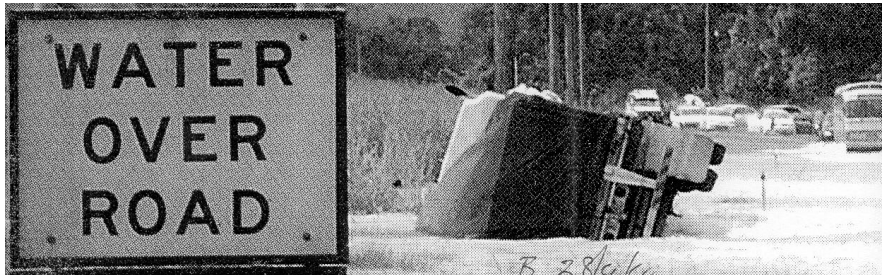
## **Time, perception and communication of risk**

Risk communication is usually about attempts to prompt considered action by a person or community. Effective communication should make the future threat real present thinking. Alternative responses should be outlined, along with likely consequences. To further prompt a considered and active response to the 'action warning', the consequences of inaction or a range of defensive actions should be made lucid. 'Preferred' behaviour should seem reasonably attractive to 'target individuals' (Svenson, 1991). The theoretical overview of risk communication in Section 9 explains why the message must be clear to the target audience. It needs to have some cognitive content (Section 5) to get people thinking about how it may impact on them, and what the alternative outcomes for them may be if the predicted impact strikes where they are. Stimulus and local risk simulations should be attempted to have risk groups properly think about the real threat, and to indicate to people what inaction may bring. A range of safety-oriented actions should also be presented.

Svenson and others make clear that it is not only what you may chose to do, but also when you do it. In the case of remote area warnings of flooding, for instance, when floodwaters may take a week to block down-catchment roads, travelling earlier than planned may be the best way to avoid the fate of the truck shown in

Figure 10.1. This figure may be used as an 'active warning image', along with the sketch of the person standing on the car roof in the flooded road crossing to remind people to travel before or after expected flooding – not during the flood.

**Figure 10.1 Nearly crossing a flooded road – Tully, north Queensland**



From: Townsville Bulletin, 28 April 2004

### **Risk communication into and through communities**

The model of hearing, understanding, believing and feeling that the information is personalized and that the respondent will indeed act has been well understood since the early 1990s (Sorenson & Mileti, 1991). The general issues of credibility (Renn & Devine, 1991) still apply. Efforts have been made since the 1960s to see how well people understood the hazard (Sorenson & Mileti, 1991). These studies continue (Berry & King, 1998). Studies reported by Sorenson and Mileti show increased knowledge as a result of risk communication efforts. People do become more aware of hazards and their personal place within the hazard threats. Unfortunately, the link between knowledge and behaviour remains tenuous (Goudie, 2001).

Overall, Sorenson and Mileti (1991) believe that increased credibility of the warning from its source means the warning will be more effective as a specific warning. They also produce referenced evidence that the electronic mass media produced the most believable public warnings. This again underlines why development of formal links between all types and levels of media information about hazards and preparation, the Bureau and emergency managers is so important. Having formal links with the media, coupled with 'real-terrain' simulations of the hazard will produce a powerful and effective 'active warning' regime. Knowing that the normal first warning of major disruptive weather comes via the evening TV news in remote settlements, simulations under the Bureau logo will carry a high-embedded likelihood of safety-oriented community response. The Bureau already has high community credibility. Other studies show that the print media is the most effective warning medium.

In line with current beliefs (Section 9) Sorenson and Mileti showed that the believability of warnings increases as people get more warnings from officials with high credibility. Women tend to believe emergency warnings more than men and people higher up the socioeconomic ladder tend to believe warnings more than

their counterparts. Minority groups have lower than average belief in warnings while people with a high knowledge of the hazard tend to find warnings more credible.

Emergency personnel going door to door may be used in sparsely populated areas and have a high positive response. This method has been used in SE Australian fire warnings, along with successful community meetings. These issues will be the focus of ongoing Agency enquiry and literature review, especially relevant to 'short, sharp' fires.

### **Spreading the warning**

Handmer (2001) recommends that the professional warning agencies should attempt to harness the "personal informational networks of individuals within formal communication systems, and by assuring that formal warning advice is consistent with local norms and behaviour" (Handmer, 2001, p. 27). This largely happens in the remote communities. The emergency service or informal community networks generally provide systematic warnings to people unlikely to read or be otherwise told of the Bureau posted warnings on the store and office doors from the Bureau fax or web site provided by community administrators. Smaller settlements provide the best situations for door-to-door warnings to be effective.

With literature and research results discussed throughout this report, this brief discussion underlines the importance of local norms, and leads directly into the core report purpose of presenting and arguing for the recommendations to recognise NESH as a n identifies 'special needs' group, and instigate the funded development of web-based, graphic and multi cultural and multilingual web information videos and information sheets, well publicised to MCOs, so that local disaster and fire managers, along with local MCOs and TAFE ESL trainers can incorporate Australian disaster risks and personal needs to get safe and stay safe are shared, successfully, with recent NESH members, listening up for a phone call from their community leader ahead of a local fire threat.. It is hoped this approach will be taken up, the ideas adapted and adopted by the relevant agencies, trialled, further refined and fully implemented.

## **Section 11                      Conclusions**

This research showed that the penetration of weather warnings and safety-oriented responses into NESH is in no way automatic or guaranteed. Learning that virtually all NESH have at least one mobile phone means that formalising phone trees from disaster management groups down should help secure safety-oriented responses ahead of an imminent threat. However, there is clearly a much greater cultural and knowledge divide to bridge, requiring concerted efforts by the Bureau, EMA, and federal organisations committed to the welfare and safety of NESH.

NESH are often traumatised by war and famine, where learning about weather may seem fringe to the multitude of adjustments NESH must make in their new country. Integrating information on extreme weather impacts and safety into school and TAFE courses is a Federal response encouraged to helping ensure NESH are aware of extreme weather threats, and know what to do to maximise their safety. To help with that goal, a federal disasters information web site, such as AusDIN, should include simple information sheets, translated into all the NESH languages, with many local pictures and stories, so that the many multicultural support organisations across Australia can be made aware of those sites, and work with emergency managers to download and discuss the community safety issues involving NESH and extreme weather impacts in Australia.

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# Appendices

## Appendix 1

### Notes from a Townsville pilot study on weather warnings for Non-English Speaking Households

#### Anne's report of meeting MRC 12 Oct 04.

New & returning (absent for prev. session) students at this lesson - Mitsuko (Japan), Tum (Thai), Chizuko (Japan), \*Amy (China) - possible at risk - low English skills, follow up for in-depth interview

Research intentions explained to class. Voluntary nature of contributions and confidentiality emphasized.

Class solutions to info dissemination re dangerous weather situations:

- \* Posters - Bus shelters/transport, Shopping Centres (QES - posters)
- \* Sunday markets (showgrounds)- regular gathering point
- \* Contact employers of Migrants - garment manufacturers, hospitality industry, farms
- \* Church groups/networks
- \* Schools - eg. Town High ( higher poss. new arrivals)

Action that should be taken in the case of cyclone-

- \* Tidy yard
- \* Food, batteries (radios), check roof, water, candles, matches
- \* Check house structure
- \* Identify safe areas in home

Where to go in times of evacuation ? - student queried this

- Designated shelters? JCU, schools, must be above sea level
- Mountains safe?
- Cyclone scale needs to emphasized/reinforced

Graphics Presentation – needs work

Next session - class to draw pictures

1) Destructive winds - not effective picture. Didn't show poss of obj. airborne or indicate need to check roof

2) No recognition of symbol by class apart from those who're long term residents of area

(possibly need to probe individuals for answers)

(Next session - Show other symbols/pictures to check for recognition)

3) Flooding - greater recognition - more effective with label

4) Fire - Drawing ineffective

## **Weather Warning Project Doug Goudie MRC**

25/10/04

Whole Class Session

New Students - Ika (Indonesia), Rie (Japan), Menchie (Philippines)

1. Reviewed graphics - ineffective images - strong winds, cyclone symbols  
- effective images - flooding

2. Students were shown various graphics depicting - responses  
Image/Responses 'cyclone' ' Fire'  
'wind'

Students a little unsure of what they thought was effective!

3. Students drew own pictures for bushfire, cyclone, strong wind  
4. Individuals reported to group - chose 1 pic. to report  
Yen - cyclone Thum - cyclone  
Nia - cyclone Ika - cyclone  
Tui - Bushfire Eden - wind/tree leaning

(Menchie was unaware of what a bushfire was)

Group had difficulty depicting fire in their drawings  
There is a need to continue seeking simple symbols  
Outcome of task - spiral for cyclone, roof off house with  
wind direction arrows for strong wind

5. Tourists may not hear messages - no base or network (as indicated by  
Rie who'd arrived from Japan the day before, somewhat disoriented!)

6. Ideas raised for possible information dissemination in times of severe weather:

Via-

- \*Mosques/temples/churches
- \*Back packer's accommodation.
- \*Asian food shops
- \*contacts from friends (ie. phone around) - Emphasise message "Phone a friend"
- \*Info. board at tourist accommodation.
- \*bus/train stations
- \*At entry point to common community areas ie. shopping centres, displays of ways to be prepared

7. MRC could maintain a database of recent arrivals - phone warnings in own language

### **Doug Goudie MRC 25/10/04 Small Group Discussion**

Participants - Yen, Nia, Ika, Thum, Tui, Gemma, Ang, Rie, Chizuko, Menchie

Discussed further issues raised in prior class session:-

1. Contact religious leaders to spread word
2. Migrant Centres to spread word
3. Core Message on TV/Radio - urge people to spread message to friends
4. Need to spread warnings of preparedness 'Active Weather Warnings' - need to disseminate. info/knowledge/ skills to be prepared
5. New arrivals - become aware of MRC and services  
Refugees - tend to gravitate to Townsville  
Multicultural Support Group - Gemma to take Doug there
6. Tourists - need to be informed through accommodation.
7. Next class sess. - 9 Nov.

### **MRC NESH WWP English Class Session - Tuesday 9/11/4**

New Students - Anna (China), Rita (Nepal)

Total attendance - 14 students

- Reviewed previous session, familiarized new students with topic and problems

Further suggestions from class for warning isolated NES residents:

- mobile electronic sign - flashing in diff. lang.
- Centrelink - provide warnings and database?
- TV - brief, regular announcements
- Weather update in various languages
- Street Speaker - vehicle cruising suburbs with notable siren

Organisations possibly willing to phone around

- Townsville Multicultural Support group
- Women's centre
- Refugee centre ?? (where is this?)
- Dept of Immigration
- Churches/religious groups/community groups/associations
- Schools - could maintain a list of NESB families - disseminate info. through children

Transient workers/pickers

- farmers to take responsibility for their workers

Backpackers - accommodation. providers/tour operators to account for tourists

Discussion with class about appropriate, attention grabbing language to be used in warnings:

Which of these words do you recognize?

severe - no-one

extreme - 2

major - no-one

dangerous - Yes !! understood by all

damaging - no-one

threatening - no response

Suggestions from class of words they'd associate with a dangerous weather situation -

strong, very bad, serious, scary

"Cyclone" this word is not readily recognized, perhaps "typhoon" ?

Information about cyclones - information about natural hazards could be provided in multi languages in arrival information/point of arrival to the country?

Group to think of words they'd associate with a dangerous situation for next week

Possible replacement for 'severe' - very big

English words group associated with each threat :

Fire - -  
 Flood - big  
 cyclone (typhoon) - bad  
 Wind - strong, very dangerous,

Warnings should be preceded by the word 'Attention' as this is recognized by many.

Other vulnerable group identified - relatives visiting Australia/sponsored tourists

Next session - 16 Nov

Post session discussion:

-Gemma to contact farmer in Bowen, Cathy at Bowen Comm. Centre & T'ville Multicultural Support group

Bowen trip next week - Doug to organize transp. & accommodation

### **MRC Int. English Class NESH WW Project Session Notes 16/11/04**

New Students attending this session: Ivette (Hungary), Wewin (Indonesia)  
 Remaining participants have been involved in previous sessions.

The following questions were put to the class to ascertain their responses to a cyclone warning and thus gain an indication of existing knowledge of procedures and preparation:

1. What would you do when you heard about an approaching cyclone?
  - secure roof
  - obtain a battery operated radio
  - listen to the radio
  - get a torch

(Most of these contributions were from a longer term resident of Townsville. Not many individuals contributed to this segment - indicating a low level of knowledge of cyclone preparedness?)

2. Who else would you tell of the impending danger?

One student said she'd talk to friends and neighbours, but most of the class did not respond, indicating that the assumed informal network may not be reliable as a form of warning and information dissemination!

The class was shown photographs of a bushfire that threatened the outskirts of Townsville in a recent edition of the 'Bulletin' newspaper. Photographs were effective and students recognized the fire as being a danger. However, with few living on the outskirts of town and many living in units they didn't perceive a bushfire as being an immediate threat to themselves.

One of the students raised the concern that when thick smoke is visible around the city it wasn't understood whether this was a genuine fire or the fire brigade 'burning off'.

DG showed an interpretation of student's pictures drawn in previous session:

Strong Wind - This graphic was effective. Many students perceived winds as being strong enough to 'bend' trees and had reflected this in their pictures. Roofs blowing off houses were also seen as an effective representation of strong winds.

Cyclone - The typhoon swirling symbol was confusing and incorrect? This graphic wasn't effective.

\*\*\*A better graphic depicting cyclone is required.

Flood - The graphic showing the person standing on the roof of the car surrounded by water was effective and most in class recognized that this meant rising water and thus dangerous.

The language used in extreme weather warnings from the Bureau was then discussed with the group. It was considered that warnings should have simple pictures and few words.

An appraisal of previous words that the class recognized showed the following:

Bad - suggested previously by a MRC class member but deemed unacceptable by the University due to the values systems associated with the word.

Strong Wind - this is understood by the group and considered effective (better than big wind which was previously suggested).

Damaging - this word was not understood by most of this group who are considered to have a lower intermediate/intermediate level of English skills.

This was the fourth and probably final session with this group for the year. It was thought by DG that these students had contributed as much of their experiences, knowledge and ideas as they could. The group would probably be revisited in the New Year when sample warning messages/information could be shown to them.



## **Appendix 2 Notes from Bowen NESH meeting**

### **Weather Warning Project Bowen 18, 19 November 2004**

Attended by Douglas Goudie, Gemma Kaye (Police Liaison Officer), Anne Jansen, research assistant and ESL teacher.

This trip was arranged to enable liaison with employees (past and present) of the Bowen Neighbourhood Centre who have regular contact with both transient pickers and permanent Bowen residents from NESH. A visit was arranged with a local farmer who is a major employer of migrant pickers in the vegetable growing season. Incidental meetings were also held with two French tourists to the area and an Indonesian resident.

Contact was made with the Mayor of Bowen, Mr Mike Brunner to notify him of the research taking place and to seek his support for the project. Each of the above individuals provided information on the habits, communication skills and perceived understanding by NES residents of extreme weather situations. They also provided suggestions for effective communication of future extreme weather warnings.

Details of meetings held follow:

#### **18 November Bowen Neighbourhood Centre Kathy**

(Kathy is the coordinator of the Bowen Neighbourhood Centre, which is a drop-in centre for residents seeking information on services and support in the district.)

The predominant NES people coming to Bowen are the fruit/vegetable pickers who frequent the area during the season from April to November. Many of this group are, consequently, not in the area during the time of greatest threat - November to March. A large number of the pickers are Turkish. The pickers tend to arrive and be employed in community groups such as groups from Arabic or Vietnamese backgrounds. Another dominant group are Filipino women who are married to Australian men and live in the area. There are other itinerant workers from various other cultural groups employed in the area.

It was perceived by Kathy that, in a time of threatening weather, farmers would take responsibility for their workers if they felt that this was their responsibility. Kathy felt that networks did exist in Bowen that could disseminate information concerning extreme weather due to the size of the community.

She noted that most of the pickers tended to live in town rather than on the farms and tended to live in backpacker accommodation or in flats or holiday units. She said that pickers from the same cultural background tended to socialize together. There were cases where families stayed on after the season had finished.

Kathy provided further potential contacts for this research. These included Colleen Tate (vacation care co-ordinator), Dianne Astbry and Gertrude Tissen, both previous ESL tutors at the Bowen Neighbourhood Centre.

Due to her being a long term Bowen resident Doug questioned Kathy on the history of extreme weather events in the Bowen area. She mentioned Cyclone Celeste (1996) and noted that this came as a surprise on a Saturday morning. It was preceded by heavy rain and weather warnings were extended a mere few hours prior to the cyclone hitting the area. She found this to be a very frightening experience. Also mentioned were the floods of 1990/1991, strong winds of 1994 that removed tiles from roofs and a flood in 1980 in which a house was lost.

Kathy had arranged a meeting with representatives of various cultural groups in the area for the next day and was to discuss with them the issues surrounding planning for and communicating the threat of extreme weather. Outcomes from this meeting are to be forwarded to Doug.

### **18 November      PM Meeting - Gertrude Tissen**

Gertrude Tissen provided further information regarding the seasonal pickers that come to Bowen. She highlighted that the electronic media was an ineffective source through which to convey extreme weather warnings. Gertrude reiterated that local farmers would take responsibility for the welfare of their workers in times of extreme weather but only if prompted/reminded. She advocated providing information leaflets to employers enabling them to then pass on comprehensive advice for times of extreme weather.

Gertrude mentioned that pickers tend to disperse into the community and reside in flats and caravan parks. This emphasized the need for accommodation providers such as backpacker establishments and real estate agents to have weather warning information packs that could be passed on to patrons and tenants.

When asked for her impression on what obstacles prevented current weather warnings from being clearly understood by the NES pickers Gertrude mentioned that the language barrier was the main obstacle. She emphasized that information should be visual and that it cannot be assumed that informal

translations would be reliable. Providing information in various languages was not considered feasible because the pickers are not always of a predictable ethnic group. It was once again identified that the most vulnerable NES individuals were those of minority ethnic groups who might be missed if weather warnings were translated into various languages.

Gertrude outlined that most pickers tended to gravitate to their own cultural groups. Many lived with others of a similar cultural background and most had few possessions and often no television. One solution that Gertrude suggested was that in times of extreme weather emergency services could call the heads of local community/ethnic groups to disseminate warning information to vulnerable group members.

Another strategy suggested by Gertrude was to promote a 'Look out for your Neighbour' campaign in times of extreme weather thus generating a sense of community responsibility. This discussion led to the possible outcome that through the activation of a counter disaster committee links could be made with community groups to mobilize translators to pass on the message about extreme weather to NESH.

Gertrude reminded that researchers should respect the need for anonymity amongst the migrant community.

### **Friday 19 November Telephone Conversation - Mike Bruner ( Bowen Mayor)**

Mike Bruner was contacted out of courtesy advising him of the research being undertaken. He obligingly phoned back personally and indicated support for the research. He gave helpful insights into NESH in the Bowen community. He pointed out that during the Christmas period/cyclone season there were fewer backpackers around.

Mr Bruner listed Tongans and Turks as being dominant ethnic groups in the picking community and suggested spreading information via an elder in those communities. He also mentioned the use of different names for extreme weather situations by some of the European backpackers. For example this group more readily recognized the terms 'typhoon' or 'hurricane' than 'cyclone'. Mike supported the proposal that the CDC, when activated, would undertake to contact 'multicultural leaders or known links' to ensure that all NESH were personally phoned through the existing multicultural support networks in his community.

### **Friday 19 November Meeting Andrew Wilcox - Koorelah Farms Bowen**

Andrew is a farmer in the Bowen district and annually employs a large number of pickers. He stated that a percentage of his pickers comprised those of NESB and many of the pickers did try to learn English in the process of work.

He said that, historically, his pickers were gone by the cyclone season, as any impending weather (storms/cyclones) was a threat to his crop that couldn't be afforded as the potential loss was too great. He indicated that the threat by bush fire to his land was minimal as most was cleared land.

Regarding the acquisition of his pickers Andrew liaised with other employers from large establishments in the Shepparton district and thus the pickers tended to move between from one big farm in Shepparton to his in Bowen. Andrew was able to provide names of other large establishments that employed migrant pickers: Bananas - Mackay Estates/Whites (Tully), Beans - Hoods Farms, Gavin Scurr (Pineapples).

Concerning the dissemination of weather warnings amongst the NESH in the Bowen community Andrew reinforced the idea of using local community group heads/leaders to spread the word. His personal concern was that the BoM could make information more accurate but added that the new Abbott Point site had recently assisted with this. His feelings were that it is better to be overcautious with weather warnings. He suggested a scale of likelihood of dangerous weather could be added to warnings.

D.G. made the recommendation that a scale using the words: extremely likely, very likely, likely, unlikely, become regularly used language in weather broadcasts.

Andrew suggested that evacuation practise take place at his farm so that safe procedures are established in the case of an emergency.

Andrew told of the situation where flooding occasionally occurs on a nearby local road. Warning signs are erected but these are often ignored and then the stricken drivers need rescuing. His outlook was that one can never be too cautious and that residents need to be prepared in the case of extreme weather.

Friday, 19 November Dianne Astbury Bowen Neighbourhood Centre

Dianne has been an ESL teacher at the Bowen Neighbourhood Centre and is therefore familiar with the language levels and limitations of many of the pickers, backpackers and NES residents of Bowen.

Dianne explained that many of the Turks that have television watch cable

television direct from Turkey, thus bypassing exposure to Australian television and weather warnings that may be broadcast. An outcome of this could be that in times of extreme weather threats warnings could be broadcast via this Turkish cable channel.

Dianne mentioned that despite many of the big tomato farmers ceasing picking in October there were still Koreans in the area picking eggplants and tomatoes. She mentioned that this ethnic group tended to stay in backpacker accommodation.

Dianne was able to shed some light on the organisation of the pickers and stated that picking was going under contract and an individual often represented the pickers. The emerging issue here is that farmers are increasingly dealing with an organized group. She noted that in the Bowen area a Turkish leader often represented these pickers. Identifying these individuals in an area could then provide points of contact for disseminating extreme weather warnings. These leaders could possibly receive information packs

The Post Office was identified as a location frequented by most of the pickers. Thus highlighting a place for weather warning notices and information displays. Other locations Dianne suggested for Bowen were medical centres and chemists.

Dianne considered the 'grapevine' to be a fairly good mechanism for information dissemination in Bowen. Doug espoused using the authority of the Mayor to have information disseminated amongst cultural group leaders in the area.

It was suggested by Dianne that information packs be sent out to community leaders at the commencement of the season and emphasised a need for education about cyclone and weather threats amongst the picking community.

When questioned on effective mechanisms for providing warnings Dianne suggested a high pitched siren warning. These could be broadcast not only on radio and TV but in the community. She stressed that a siren is a simple, effective way of sounding a warning.

Dianne has regular, ongoing contact with NES families and also mentioned that schools and childcare centres were other points for information dissemination via children. It was suggested that perhaps B. of Met and other relevant bodies could look to funding community English classes in community centres such as the Bowen Neighbourhood Centre.

Friday 19 November Interview with Hannah (Indonesian resident of Bowen)

Hannah speaks a little English and is married to an Australian. He speaks English but sometimes goes away thus leaving her as a vulnerable individual with limited understanding of broadcast weather warnings. She stressed that she is often working and doesn't get time to watch much television anyway. From speaking with Hannah it was ascertained that the assumption that friends would notify her in times of extreme weather couldn't be guaranteed.

With Hannah's limited English it was useful to have a few words in her first language (Indonesian) to clarify meanings. (ie. banjir = flood)

Further contacts -

1. Hassan - (business name 'Marti Contractors') a picker contractor who negotiates work for pickers in the season. Currently away. Doug to contact in 2 weeks - 0407821729.
2. Contact was later made with a Gumlu farmer (Grace Castorina 0417 706 823) who was keen to receive any weather warning information that may be available in the new year. This farmer was very willing to convey information to pickers. She was however, not sure of the origins of all the pickers they employed.

19/11/4

Meeting held by Kathy Hansen in the Bowen Neighbourhood Centre

### **Meeting with Verni Subra and Gertrud Tissen – 19 November 2004**

Convenor: Kathy Hansen, Community Development Worker, Bowen Neighbourhood Centre.

### **How would you expect to hear of a major weather event?**

Both Verni and Gertrud said that they would rely on radio and TV as well as neighbours and friends to get information. In extreme cases they were aware that the Emergency Services might use a loud hailer from a vehicle to let people know. Verni was aware of a register of persons living in a flood zone, for example, who would be contacted by the relevant emergency service. In our case this would be the SES. When her brother-in-law moved to Bowen his neighbours told Verni and her husband to tell him that he was living in such an area and that he needed to register.

**Do you know of any NESH in Bowen who wouldn't receive major weather warnings from electronic media because it would have no meaning to them?**

Gertrud knew of a Turkish family and some Iraqi pickers who would not watch TV news as they could not understand. They might understand a neighbour. The comment was made that radio would be even harder to understand. At least TV is somewhat visual.

**Do farmers take responsibility for the welfare of their pickers in times of major weather situations?**

They thought that if warnings were first issued during working hours the farmer would take responsibility especially in cases of sudden events such as bush fires etc. They would not go looking for workers after hours however to tell them. Often the farming activity would have ceased due to bad weather anyway. The comment was made that packing sheds are easier to share information with as the people are in one area.

**Do networks exist in town where the message about possible threats is spread? (i.e. either through community groups, through similar communities via schools/childcare facilities)**

Networks were yet to be developed i.e. through Neighbourhood Watch or Bowen and District Cross Cultural Group for example. The participants were aware of a council list/SES. They also felt there was some informal links between people. The school was thought to be a source of information. People received news through other parents and through other children. It seemed like most NESB families spoke some English at least.

**Would you ring friends to inform them of an approaching weather threat? (Is informal network reliable here?)**

Both Verni and Gertrud said they would both ring friends however they felt this was not a totally reliable method.

**General discussion followed on how the warning to the most vulnerable NESH's could be fairly guaranteed?**

The suggestion was made that the emergency services have access to a list of translators and to NESH's in the community. If this was possible how could it be done? Could Real Estate Agents have a list of tenants with NESH's? Is there a local government SES plan? There was no identifying information in data like the census. There were also a percentage of illegal immigrants/people avoiding having their whereabouts known for whatever reason. It may be even harder to contact these people although it was thought there would still be some informal networks. Backpacker management would have a duty of care to warn residents.

Existing community groups like women's groups and the Bowen and District Cross Cultural Group could be used to discuss how to ensure the information gets out to people.

The comment was made that in some cases even if people hear and understand the words they sometimes do not understand the implications. For example the implications a wind change can mean to the direction and severity of a fire. Or storm surge in a cyclone where the ocean comes much higher than normal.



## **Appendix 3            Notes from MCO, Cairns**

### **Result of meetings in Cairns 24-25 November (year)**

Discussion with Linda Anderson Berry (Weather Bureau), Director and members of the Migrant Settlement Services and Police liaison officer for the District Disaster Management Group showed that the Disaster Management Act (2003) does have provision for a standing response to notify people or groups 'with special needs' when the Disaster Management Group is activated 'once such special needs people have 'self-identified'. So people who are deemed most vulnerable need to formally 'self identify' or have others do so on their behalf for there to be guaranteed efforts through standing procedures for Police within the DMG to undertake notifying all 'multi cultural leaders and groups to inform their constituents that weather danger was approaching, and the correct evasive actions to maximise safety.

A report from the Director MSS follows:

Dear Doug

It was good to meet with you last Wednesday. The issues raised presented us with new ideas and we are happy to work with you to present the CALD communities with relevant information about natural disasters such as cyclones and to think about systems that would provide adequately and timely information to migrants who do not access mainstream sources of information.

I rang the DIMIA's Brisbane Office regarding your request to speak to the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) and was advised that you could ring 02 62641111 and ask to speak with someone in the Community Programs Area.

As requested I scribbled down the following about Centacare Cairns.

Centacare Cairns is a service-oriented organisation with three offices located around the Cairns Business District. Centacare focuses on family and individual care through a range of services offered by the Catholic Diocese in Cairns, the Atherton Tablelands, South Johnstone, Mareeba and Mossman. Services are accessible to anyone in the community but the focus is on those people who are most disadvantaged or who come from minority groups. Centacare Cairns has been operating in the Cairns region for over 21 years. Services provided include Counselling, Pre-Marriage Education, Natural Family Planning, Pregnancy Support, Seasons for Growth, Emergency Relief, Mental Health Resource Service, Centacare Employment, Personal Support program, Cairns Youth Mentoring Scheme and Migrant Settlement Service.

Migrant Settlement Services (MSS) receives its core funding from the Department of Immigration and Multicultural Affairs (DIMA). MSS is the DIMA designated Lead Agency for the provision and coordination of services to migrants in the Far North Queensland region and has been operating since July 1999. At present MSS offers

the following services: The Community Settlement Services Scheme (CSSS), The Integrated Humanitarian Settlement Strategy (IHSS), and the Community Jobs Plan (funded by the Department of Employment and Training).

Staff who attended the meeting were:

Sulaiman Forna – Community Development Officer and Community Settlement Officer Outreach

Olive Tau Davis - Community Development Officer and Community Settlement Officer Outreach

Leva'ai Rea - Community Settlement Officer

Angie Dwyer - Community Settlement Officer

Yelena Yovanovich – IHSS Case worker

Your research is valuable and could lead to us developing activities that would benefit migrants. Let's keep in contact.

Regards

Hanz Spier

Migrant Settlement Services

Centacare Cairns

PO Box 201

CAIRNS Q 4870

Phone: (07) 40 41 7699

Fax: (07) 40 41 7655

#### DISCLAIMER, CONFIDENTIALITY & PRIVACY NOTICE

Migrant Settlement Services is a program of Centacare Cairns and receives funding from the Department of Immigration Multicultural and Indigenous Affairs. The contents, information, advice or opinions expressed in this email are those of Migrant Settlement Services alone. This email and any attachments is confidential. Unless expressly authorised by the sender, you must not use, disseminate, copy or distribute the information contained in this email. If you are not the intended recipient, you have received this communication in error. In that case, please delete all copies of the email immediately and contact Centacare Cairns either by return email or phone 07 4041 7699. Thank you.

Discussion with Hanz and others over 3 hours revolved around establishing that recent immigrants with few networks and poor English skills were, in fact, highly vulnerable. Most of the group members took this as a given. Getting the effective weather warnings to these 'at risk' people was understood as the challenge. The group felt there should be an information session for people at risk, and there should be one central agency as the reliable contact point for all multicultural contacts. It was pointed out that TAFE organises English classes, and that they would have contact details for many NESH members.

A strong suggestion (applicable to the wider community) is to foster neighbour support. It was suggested that encouraging people in each separate suburban block to get to know each other enough, especially moving in to a crisis situation would be feasible. This would help engender the current social planning policy of encouraging resilient, inter supportive communities.

Once each state and territory take as given that members of multicultural groups may be considered to be special needs groups, especially recent arrivals without English skills or entrenched informal networks, The LG DMG becomes obliged to contact community multicultural support groups and community leaders to activate 'phone trees' and, where needed, door knocks. It was pointed out that once one of these types of alarms – snowballs- are activated, they are difficult to stop. Perhaps once a general, say Category 4 cyclone, warning is given to the community at large, response actions would be generally difficult to stop.

It was suggested that the local radio stations, especially the ABC can put out warnings in the main dominant other languages. In Cairns there are representatives from Liberia, Sierra Leone, Sudan, Burundi and PNG, Hmong, China, Japan, Arabic countries, Samoan. The problems of multicultural broadcast are that they miss many people – those with least English rarely listen to the radio – they cannot understand it. If People with poor English did listen endlessly, they may belong to a minority language group, such as one of the 500 languages of PNG. The most vulnerable, language-wise, may be doubly marginalised by speaking a language not included in the mainstream multi-lingual broadcasts, so I continue to shy away from written multilingual weather warnings, and continue to argue for images – simple iconographs, pictures and computer simulations of the real threat over the real landscape at risk.

Hans suggested that information kits be constructed, like Community health information, using pictures to illustrate a wide range of dangers in Australia, including spiders, snakes, cyclone and floods – to broaden the education base and place weather extremes in fully with other community safety issues; combining community health with natural disasters.

There appears merit in this idea as part of the community education projects which may need to be developed. This preventative approach should be supported.

Cairns has a community radio – Festival Fair – which broadcasts in over 30 languages. It is recommended that Festival Fair are contacted to be invited as part of the team to develop radio 'community education' prior to weather threats to let NESH know in general what form Australian weather threats may take.

Work with remote Indigenous community and the developing pilot work with NESH make a compelling case that the only adjectives for threatening bush fire weather, cyclones, destructive winds and floods are: 'big' and 'strong'.

Along with the 15 strong NESH focus group in Townsville, the MSS work team (from Africa, Philippines, PNG and NESB Europe) was strongly of the view that other adjectives: severe, extreme, dangerous, destructive, disruptive were not properly understood so the communication content fell rapidly when we strayed away from 'big' or 'strong'. This may feel like an unreasonable limitation to forecasters, but risk communication depends on the receiver hearing and understanding the message.

As the MSS looks after migrant access to services, it is reasonable for the MSS to extend its development considerations to ensuring that recent migrants can feel they have access to major weather warnings, and how to maximise their safety.

### **Developing a pilot NESH weather warning information and safety package**

The group and I spoke about the idea of a draft project which would involve development of a weather warning package for NESH, and to get feedback from their client base. This could take the form of further meetings from late February to meet with recent immigrants and workshop material for testing through two rounds of mail-outs with the MSS's usual newsletter, a well produced monthly of about 6 pages. Simple weather warning methods can be pilot tested in this way.

A suggested fully inclusive consultancy fee for this process, managed by MSS and directed by Goudie for the Bureau is \$6000. MSS may be able to gain \$ for \$ DIMIA funding to boost the full scope of this risk communication study. Once 'approval in principal' is granted from the Bureau, MSS will be invited to develop a pilot project proposal with Goudie. Goudie will provide Risk communication material developed to date.

The NESH weather warning package for development will focus on communicating the nature of the four hazards – wind, fire, cyclone and flood, and how to maximise household safety – stay where you are and strengthen if basically safe, or move early in the warning process to a place of clearly greater safety. The developed approach will attempt to be 'whole-of-government' and multi-media, seeking direct support from Department of Immigration, Multi cultural and Indigenous Affairs, Emergency Management Australia and Department of Health.

These approaches, if successful, will feed in well to the Council of Australian Government mitigation 'paradigm shift' in disaster management (COAG 2004), and should get support at the national level through the Community Safety Working Group. It is through this same working group that a proposal to Australia Post allowing resultant information packs to be placed on all AP counters from October to March will be sought. Nationally, we will work toward developing two basic packs, for the northern and more southern parts of Australia, distinguished by cyclone and storm surge information.

Discussion with relevant police in Cairns showed a willingness to contact MC groups, as they had some contact details, but that this warning process was not

'assured', as the requirement of special needs groups 'self-identifying' had not been formalised as given.

NESH Recommendation 1: That State, Territory and Local Government Disaster Management Groups (Counter Disaster Committees) accept as given that members of multi cultural groups with low English skills are viewed as automatically 'self identified' as special needs, in terms of disaster warnings and consequent safety needs. Thus each Disaster Management Group, when activated to respond to a disaster situation, will automatically make exhaustive efforts to contact the local multicultural groups, active or in abeyance, to trigger MC workers, volunteers and community leaders to contact ALL members of the multicultural community under threat.

## Appendix 4 Notes on Brisbane MCO meetings

Organisation	Person/s	Contact email Comments*
ACCESS, Migrant Employment Services Logan	Mira Chapman, Coordinator MES	<a href="mailto:mesp@accessinc.org.au">mesp@accessinc.org.au</a> ; <a href="mailto:accessinc@accessinc.org.au">accessinc@accessinc.org.au</a>  Organisations like ACCESS are embedded in the Migrant and Refugee Assistance Organisation Office closes over Xmas, but Mira would ensure there was staff with the Office mobile to ensure availability to trigger the described response.  That person may be called the Culturally and Linguistically Diverse - CALD "Emergency Alert Contact"
Hindu Temple, Burbank	Priest Ram Sastri	<a href="mailto:Shastriram@yahoo.com">Shastriram@yahoo.com</a> His Temple organisation can contact 4000 people. He can guarantee all would be contacted. He would contact the community leaders, the 'mainlines' They have about 1000 devotees who speak Punjabi, about 3,000 Gujarati. This reinforces the argument that multilingual broadcast will need to be in many languages if used.  I will phone the President of the Temple management group, Satish Aggarwal, 32738507 to confirm what was discussed, and invite him to continue this safety-oriented dialogue.
Anglicare Refugee and Migrant Services, Camp Hill	Kareena Clifford, Manager, Saharla Mohamud Secretary, Somali Woman's Group; Bobby Whitfield, Liberian care worker, President of the Liberian Community	<a href="mailto:armsch@tpg.com.au">armsch@tpg.com.au</a> ; <a href="mailto:kc1arms@tpg.com.au">kc1arms@tpg.com.au</a> ; <a href="mailto:dversity@tpg.com.au">dversity@tpg.com.au</a> ; <a href="mailto:whitfieldbobby@yahoo.com.au">whitfieldbobby@yahoo.com.au</a>  "Easy to ring clients, all have phone – who pays for mobile calls?" "Twenty calls might cost me \$40. Who pays?"  Bobby made the point that weather warnings came at the end of the news, where NESH, even if they had started watching, have probably drifted off. Major threats should come early in the news bulletins.

		<p>Bobby's persuasive arguments forced me to accept there may be merit in multilingual broadcasts, perhaps through the local ethnic radio station 4AE. I am concerned that less-represented language groups will be forgotten unless contacted as per Rec .1.</p>
<p>Multicultural Development Association Inc Stones Corner</p>	<p>Dhano Obolongo, Community Settlement Officer, Sudan; Linda Leonard, Employment Officer, Fiji</p>	<p><a href="mailto:ghanoo@mdabne.org.au">ghanoo@mdabne.org.au</a>, <a href="mailto:lindal@mdabne.org.au">lindal@mdabne.org.au</a></p> <p>There was some difficulty communicating the direction the Association would take in this issue. I will follow up by contacting the Director, Kerrin Bensen: <a href="mailto:kerrinb@mdabne.org.au">kerrinb@mdabne.org.au</a>.</p> <p>The developed information package could be issued to the TAFE Adult Migrant English program, more or less compulsory for 510 hours.</p> <p>Many of their clients are illiterate.</p> <p>Their clients without English speak Russian, German, Italian, Samoan, Fijian, Malay, Korean, Japanese, Taiwanese, Mandarin, Bosnian, Croatian, Serbian, Hindi, Gujarati, Kurdish, Turkish, Swahili, Somalian, Liberian, Sudanese, Amharic, Tignnua?, Spanish, Macedonian, Ethiopian, Rwandan, Arabic.</p> <p>Clearly, there are some groups without entrenched networks to rely on any community member hearing of a weather threat and informally alerting other community members</p>
<p>Philippines Community</p>	<p>Terry Manso Community leader</p>	<p><a href="http://www.reliv.com">www.reliv.com</a></p> <p>Following a dinner with about 30 Philpinos, I spoke with Terry about his role as a community leader. He assured me the Pilipino community would ensure all knew of every extreme weather threat, even recent arrivals. He supported the model, but pointed out there was a good standard of English in nearly all the Pilipino arrivals to begin with.</p>

*Muslim community	Saltan Deen Community leader	Not yet contacted (not available for planned meeting) – <a href="mailto:sdeen49@hotmail.com">sdeen49@hotmail.com</a> will email.
* Derek Moo	Multicultural Community Centre Fortitude Valley	<a href="mailto:derek@mccommunitycentre.org">derek@mccommunitycentre.org</a> Not yet contacted (not available for planned meeting) will email
DIMIA	Mike Kennedy, Deputy Director, Qld	<p><a href="mailto:mike.kennedy@immi.gov.au">mike.kennedy@immi.gov.au</a> Discussed model, and ways of ensuring current multicultural group or community leader contact lists are accurate.</p> <p>Discussed idea that nationally, DIMIA would be the natural repository of a public access web site of all Multicultural groups, collating what the states and territories provided with their own records. Mike will approach his federal counterparts on this proposal.</p> <p>DIMIA is working more and more with Local Government, and has a good web site <a href="http://www.immi.gov.au">www.immi.gov.au</a></p> <p>Suggested I contact the Federation of Ethnic Community Councils of Australia (FECCA). This report will be sent to them via the Chair, Abd-Elmasih Malak at <a href="mailto:admin@fecca.org.au">admin@fecca.org.au</a></p> <p>Their support and information distribution to maximise safety ahead of a natural disaster will greatly enhance this endeavour. Likewise for the Ethnic Communities Council of Queensland (Ian Muil, Executive Director 38449166).</p>
Volunteering Queensland Inc.	Carlton Meyn Manager, Programs development, Events and IT	<p><a href="mailto:carlton@volqld.org.au">carlton@volqld.org.au</a> VQ is the peak volunteer organisation in Qld, They connect people to community groups, train in managing volunteers, encourage citizen participation and recognise that community organisations need a lot of volunteer support to build capacity and empower community support groups.</p>



		<p>Carlton suggested that because nearly all recent immigrants watched a lot of sport, accessing the sports channels with ribbon warnings in some languages (or pictures) would help trigger an effort of alarm and seeking of more information.</p> <p>A good idea.</p> <p>I also discussed with Carlton the developing strategy to package up the developing model and hold 3 forums around Brisbane to discuss with Organisations and recent immigrants to get feedback on the package and the model.</p> <p>Like others, Carlton was supportive of the idea.</p> <p>Further, Carlton suggested that the information/awareness package, once developed, would need to be introduced to the multicultural organisations (and TAFE) to pass on to recent immigrants. That in turn would require people and resources. We thus began <b>developing recommendation 3</b>: to seek funding to provide training for people to take the weather warning response packages out to multicultural organisations and introduce them to workers and recent immigrants. This should then become an annual 'pre extreme weather season' exercise each October, following the model that FESA in Western Australia have developed to ensure remote Aboriginal Communities were cyclone- and flood- prepared.</p> <p>Suggested that Centrelink would be interested in getting this safety oriented information package to their NESH clients - I will contact Grace Prince (General Brisbane Manager), <b>30003236</b>; The Federal Department of Families and Community Services <a href="http://www.facs.gov.au">www.facs.gov.au</a> may support funding for the above package development and delivery processes.</p>
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\* Note, all supported the model outlines above, and confirmed virtually 100% phone ownership. All independently suggested an information package, developed as Recommendation 2.

Further action: Contact Local Government Association of Australia and Emergency Management Australia to get their input to the outlined model.

The model outlined in this report seems simple and workable, formalising a process likely to be followed anyway, within existing structures and relationships. Developing an acceptable information package will require input from many sources. Anyone with knowledge of existing multicultural disaster warning packages is encouraged to email details to me.

## **Appendix 5 Notes from NESH weather warnings in Victoria.**

Meeting with Sultan Cinar  
Islamic Women's Welfare Council of Victoria  
[iwwcv@vicnet.net.au](mailto:iwwcv@vicnet.net.au)

22/12/2004  
Doug Goudie and Richard Micallef  
169 Fitzroy St Fitzroy 3065

Consultation on Weather Warnings needs of new arrivals and NESH

Communication needs would be different for each community; some use ethnic newspapers and radio and their interests are political, religious, social or cultural. However, most, especially Arabic speakers, use satellite TV.

Richard to research crawl text possibilities for satellite TV.

Information on any media must be 'direct and clear' with front page banners in colour for newspapers. Sultan further suggested that a volunteer phone out system with telephone lists provided by Telstra would be feasible; the current problem being that her network phone contacts extend only to community leaders and not to step 4 of the Goudie model.

A colour coding system and symbols would be useful and a community education campaign to go with the distribution of the proposed information packages would be very effective. Doug described some symbols.

These community education campaigns would be effective topped or tailed onto weather reports as all ethnic people watch the weather reports. With workshop community education strategies Sultan suggested that professional bi lingual facilitators be engaged, one who would be able to understand both social and scientific factors.

Also, a 10 minute package could be developed as part of English courses at Tafe and other training centres. Mainstream delivery could also work such as through chemists, medical centres, post offices, etc as well as through private organisations such as health insurance companies.

Sultan also pointed out that effected groups should include long term NESH not just new arrivals; as this group ages they become even more isolated.

Also, some communities are serviced by small special interest groups that may not be professional at training and information delivery.

**Meeting with Robyn Betts**

Office of Emergency Services Commissioner  
Dept of Justice,

[robyn.betts@justice.vic.gov.au](mailto:robyn.betts@justice.vic.gov.au)

with DG and RM

Maribyrnong and Benalla have telephone trees for flood warnings. Most municipalities have MERO's (Municipal Emergency Resource Officers)

Coode Island is trialling an automated telephone system using the message 'to get further information' and we need to contact BEST (Bureau of Emergency Service Technology)

RMH, through Barbara Minutzi has been researching how linguistically diverse communities get emergency and safety messages.

AMES (Adult Multicultural Education Services) has produced an information pack which is being delivered through their English classes.

There are 400 homes in the Maribyrnong flood plain and some of these are definitely NESH.

Strategies for presenting funding applications to EMA were discussed. As flash flooding is very significant in urban Victoria it was decided that Robyn could research applying for funds to develop simulations for 'probable maximum flood damage' attending to messages about swirling drains, falling branches, and dangerous flood waters etc.

Partners for this application would be BOM and SES or Dept of Sustainability and Development (Ian Gauntlett)

Doug would work on an application to EMA for information pack developments, once again with simulations that make very real to NESH the dangers of storms and floods and induce safe behaviour *[This approach was later developed with Logan Shire, Gold coast. The funding application to EMA was unsuccessful].*

Meeting to Northern Migrant Resource Centre deferred

Send info to

[naomi@mrcne.org.au](mailto:naomi@mrcne.org.au)

Sehar Cinar

Kurdish Association of Victoria

[kurdish@alphalink.com.au](mailto:kurdish@alphalink.com.au)

93795679

There are about 5000 Kurdish in Victoria and most households have phones  
 Sehar felt that the model would work especially with the 'tell your friends message'

In looking at the communication model the use of pictures is very important for Kurdish community. She said that the strong wind is good but to make it more urgent the picture should include some furniture and maybe a baby's cot or pram flying through the air. With the flood picture she thought that making it into a cartoon with characters would be better so that people could see a sequence.

Sehar suggested showing people and some Australian native animals trying to escape would help demonstrate the fire pictorial. In the background there could be a house with volumes of smoke coming out of the roof.

All words used should be simple and clear. Doug asked how the word 'extreme' would be understood by Kurdish community. She explained that when rain came in Turkey they hear strong sounds of water rushing. All Kurds live in mountains and have a good appreciation of flooding. They also understand fire dangers but fires are not as big as in Australia.

Using words like small flood, dangerous or very dangerous or extremely dangerous would be the best three levels of warning.

She agreed that it would be good to have trainers from the community. Doug explained how a DVD could help here and Sehar agreed that that would help.

She said that organisations like hers would manage a phone tree well. If it is a very dangerous area then they would need to know what kind of action to take and would consult with SES (State Emergency Service).

Most Kurdish have computers but not necessarily any Internet access...maybe 30% have.

She said that a big picture with date and time displayed in large letters on website and TV would be beneficial.

She acknowledged that FECCA would be a useful contact.

Turkish Womens' Friendly Association  
 Yuksel Calsimek  
[banksia@bigpond.net.au](mailto:banksia@bigpond.net.au)

Every Turkish household has at least one English speaker in the house. More than 90% of Turkish households would have Internet access.

Doug described the 'weather channel website' proposal and Yuksel agreed that that would be a good strategy. Because so much has happened in Turkey, extreme weather and other displacements that all Turkish people are familiar with the urgency of communication needs and they always contact each other. Eg Yuksel described a phone tree system she has been using for news releases from Turkish Councillors which would be appropriate for weather warnings.

Major weather warnings should come through TV and the Turkish community would be activated. Every family has at least one mobile phone owner; Yuksel agreed that text messaging would work well.

Flyers are useful because they would be posted in community centres...must be eye catching. Doug agrees to do flyer and email this to organisations as an attachment and get feedback on languages needed for any translations.

Yuksel said that a presentation to include pictures would be very much better understood

Abdi Aden  
[nurkey747@hotmail.com](mailto:nurkey747@hotmail.com)  
 Somali Welfare Association/ Horn of Africa Group  
 0419 306689

One in twenty households have no phone, most of this group are living in 'emergency housing' and are sponsored by the Aust Government ...under the direct care of DIMIA funded settlement organisations. Doug to follow up on government responsibilities.

Abdi agreed that the model for communication would be a good workable system. Abdi said that neighbours are most important in communicating warnings and he endorsed the strategy to 'tell your friends and neighbours'.

Migrants take English classes so the information could become part of the courses because migrants are very focussed at that early time in their induction to living in Australia. Most migrants have the disbelief syndrome; Doug described then maximum flood simulation to raise awareness among them.

When certain war-torn peoples come to Australia they act overcautiously for some time so that it is hard for such people, Somali in particular, to talk to police and fire fighters or state emergency workers. Somali people are very unified and they help each other.

Doug described the 'weather channel model' and Abdi thought it would be good for translations into Somali, Sudanese Arabic (the average Sudanese would understand mainstream Arabic a Abdi said), Eritrean speak their own language and some speak Arabic. Iraqis can also understand mainstream Arabic.

Anharek spoken in Ethiopia.

Apart from Broadmeadows other main concentrations of new arrivals are at Highpoint area in Maribyrnong (Monee Valley) and Nth Melbourne where there are Horn of Africa and Iraqi communities are...Springvale too. Richard to research venues and communities. Fitzroy could be another.

#### Detail of the Melbourne meetings

Organisation	Person/s	Contact email Comments*
Islamic Woman's Welfare Council of Victoria	Sultan Cinar	<a href="mailto:iwwcv@vicnet.net.au">iwwcv@vicnet.net.au</a> Weather threat information can be spread through ethnic newspapers and radio. Broadcasts overseas satellite TV, especially of sports programs are widely watched. The Bureau could negotiate that these broadcasts are interrupted if a major threat is looming. Media information must be direct and clear. Colour coded warnings were suggested. Saltan's experience is that all ethnic people watch the weather. With the since-developed web-based delivery approach, TAFE could use the information and training packages as part of the English language and Australia experience used to orient new arrivals. Long-resident, elderly and isolated NESH need to be included.
Vic Att Gen Dept	Tony Pearce	<a href="mailto:tony.pearce@justice.vic.gov.au">tony.pearce@justice.vic.gov.au</a> <b>Modelling a simulation of major flooding</b> Tony looking at catastrophic events for the COAG process. One of his researchers sees the need to research NESH. I suggested she may work with me with Melbourne NESH, the Bureau and others to model up a four dimensional simulation of major flooding of the Yarra valley catchment, with introductory graphics to convey these three messages: 1. Check how safe your home is from maximum predicted flood levels. 2 Leave early for higher shelter if likely to be in flood (put valuables as high up in your home as make be above the flood level) 3. do not drive into flooded road crossings.
Office of Emergency Services Commissioner	Robyn Betts Research officer	Warning phone trees already exist in Maribyrnong and Benella (will consult). Municipal Emergency Resource Officers are widespread. Automated phone system is being trialled at Coode

		Island (major petroleum refining area), with collaboration of OESC and Telstra. Robyn provided further leads and contacts (see below). These meetings developed into the proposal to generate a flood simulation over Logan City.
SBS	Michael Smith	See Part C 5
See reports below		

\* Note, all supported the model outlines above, and confirmed virtually 100% phone ownership. All independently suggested an information package, developed as Recommendation 2.

Meeting with Sultan Cinar  
Islamic Women's Welfare Council of Victoria  
[iwwcv@vicnet.net.au](mailto:iwwcv@vicnet.net.au)

22/12/2004  
Doug Goudie and Richard Micallef  
169 Fitzroy St Fitzroy 3065

Consultation on Weather Warnings needs of new arrivals and NESH

Communication needs would be different for each community; some use ethnic newspapers and radio and their interests are political, religious, social or cultural. However, most, especially Arabic speakers, use satellite TV.

Richard to research crawl text possibilities for satellite TV.

Information on any media must be 'direct and clear' with front page banners in colour for newspapers. Sultan further suggested that a volunteer phone out system with telephone lists provided by Telstra would be feasible; the current problem being that her network phone contacts extend only to community leaders and not to step 4 of the NESH WW phone tree model.

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Royal Melbourne Hospital, through Barbara Minutzi has been researching how linguistically diverse communities get emergency and safety messages.

AMES (Adult Multicultural Education Services) has produced an information pack which is being delivered through their English classes.

There are 400 homes in the Maribyrnong flood plain and some of these are definitely NESH.

Strategies for presenting funding applications to EMA were discussed. As flash flooding is very significant in urban Victoria it was decided that Robyn could research applying for funds to develop simulations for 'probable maximum flood', which should also include providing public messages about the hazards of swirling drains, falling branches, and dangerous flood waters – do not enter floodwaters.

Further partners for this application with CDS, BOM and OESC would be SES and Dept of Sustainability and Development (Ian Gauntlett)

Doug would work on an application to EMA for information pack developments, once again with simulations that make very real to NESH the dangers of storms and floods and induce safe behaviour.

Meeting to Northern Migrant Resource Centre deferred  
 Send info to  
[naomi@mrcne.org.au](mailto:naomi@mrcne.org.au)

Sehar Cinar  
 Kurdish Association of Victoria  
[kurdish@alphalink.com.au](mailto:kurdish@alphalink.com.au)  
 93795679

There are about 5000 Kurdish in Victoria and most households have phones  
 Sehar felt that the model would work especially with the 'tell your friends message'

In looking at the communication model the use of pictures is very important for Kurdish community. She said that the strong wind is good but to make it more urgent the picture should include some furniture and maybe a baby's cot or pram flying through the air. With the flood picture she thought that making it into a cartoon with characters would be better so that people could see a sequence.

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All words used should be simple and clear. Doug asked how the word 'extreme' would be understood by Kurdish community. She explained that when rain came in Turkey they hear strong sounds of water rushing. All Kurds live in mountains and have a good appreciation of flooding. They also understand fire dangers but fires are not as big as in Australia.

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Yuksel Calsimek  
[banksia@bigpond.net.au](mailto:banksia@bigpond.net.au)

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Abdi Aden  
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 Somali Welfare Association/ Horn of Africa Group  
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One in twenty households have no phone, most of this group are living in 'emergency housing' and are sponsored by the Aust Government ...under the direct care of DIMIA funded settlement organisations. Doug to follow up on government responsibilities.

Abdi agreed that the model for communication would be a good workable system. Abdi said that neighbours are most important in communicating warnings and he endorsed the strategy to 'tell your friends and neighbours'.

Migrants take English classes so the information could become part of the courses because migrants are very focussed at that early time in their induction to living in Australia. Most migrants have the disbelief syndrome; Doug described then maximum flood simulation to raise awareness among them.

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Apart from Broadmeadows other main concentrations of new arrivals are at Highpoint area in Maribyrnong (Monee Valley) and Nth Melbourne where there are Horn of Africa and Iraqi communities are...Springvale too. Richard to research venues and communities. Fitzroy could be another.

## Appendix 6

## NESH Meeting Fliers

ARE YOU STILL LEARNING ENGLISH?  
DO YOU SPEAK A LANGUAGE OTHER THAN ENGLISH AT HOME?  
HAVE YOU RECENTLY ARRIVED IN AUSTRALIA?

THEN PLEASE  
COME TO OUR PRESENTATION  
ON HOW TO KEEP SAFE WHEN THERE ARE

# WEATHER WARNINGS

Tell us how we can

- help people to be prepared for our major weather events like floods, storms or fires
- give your community weather warnings in time

**We need your feedback!**

Come to a presentation by Dr Douglas Goudie a Researcher with the Centre for Disaster Studies, James Cook University, working on behalf the Australian Bureau of Meteorology to help develop ways of maximising safety ahead of major weather events.

**AT**

So please come and bring your friends. Light refreshments will be provided.

**For more information please call  
Sam Narayan 0412720880**

**Appendix 7                      NESH notes Brisbane June 2005**  
**09/06/05 Presentation at Access Woodridge**  
**10am Weather Information Session**

Sam Narayan  
 Douglas Goudie  
 Geoff Crane

List of name of participants

- \* Most migrants don't speak English but understand it better, according to one of the participants.
- \* Most can read and write
- \* If the presentation is presented fast then they client groups can't follow this.

Geoff Crane from Australian Bureau of Meteorology gave his presentation from 1010 -1025am

Mr Crane spoke about:

- Thunderstorm
- Hail storm
- Weather patterns
- Pictures of Hail in Brisbane last week 2/06/05
- Dust storm
- Floods- Alice Spring/ Central Australia.
- Bush Fires how gum tree helps in the fire to make it big.

Douglas Goudie

- Explains the facts about the presentation and how it is important to know the signs and have an understanding of the weather pattern within the Non English speaking background.
- Explains the facts on mobile phone tree of communication within these households.
- Considers issues on
  - Big Wind Storms
  - Big or Extreme floods
  - Fire weather

Explains how the Meteorology office functions when there is a severe warning of the weather pattern, how this information is passed on through the chain of the emergency services on to the grass root level. Especially the Non English speaking household.

Doug asked the participants to do a group work in identifying what is the most important issue which they want it highlighted and in what languages. Request for pictures which will illustrate the importance of the weather pattern which the client groups. Develop action pictures.

### Feed Back and Discussion

List of attendance at ACCESS Woodridge.

<u>Name</u>	<u>Nationality</u>	<u>Language Spoken</u>
Karima N Sobaih	Australian	English
Mahamed Abdi Yusuf	Somali	Somali
Said Aoci	Congo	Swahili
CadoAoci	Congo	Swahili
Gatkuoth Simon	Sudanese	Arabic, English
James Nyok Thanyom	Sudanese	Arabic, English Kisual
Laila Mahamed	Somalia	Somali
Fatuna Marakone	Somalia	Somali
Bashir Yussuf	Somalia	Somali
Willie Harvey	Sierra Leonean	English
Beatrice Harvey	Sierra Leonean	English
Theresa Lofipo	NZ Samoan	English, Samoan
Kebbeh Pivi	Sierra Leonean	English

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### Meeting at Anglicare Camp Hill

**9/6/05 1300-1500**

Doug Goudie spoke about  
Floods  
Bush Fire  
Thunderstorm

Explains how this information is passed from the meteorology office through to the mass

He explains ones the plan is put into action the meteorology office will be using the network established to disseminate this information through the multicultural groups which will then filter through to the people from non English speaking household.

Speaks about how the phone tree will work in different communities. The group is happy that the government is doing something like this to educate the people from non English speaking household on the weather information. There were some issues highlighted such as getting someone to speak at functions and if the people have concerns they can ask questions.

Geoff Crane (Senior, BoM) speaks about

Floods  
 Bush Fire  
 Thunderstorm  
 Hailstorm  
 River floods  
 Strong winds etc

Some concerns from the group

- How does the emergency worker work?
- Information not passed through the communities
- Not enough awareness
- Bobby from Anglicare suggested that this session should be given in schools/institutions especially to the migrant community. He Represents the Liberian community
- Sahala from Sudanese community suggested that this should be taught at TAFE through the Adult Migrant English Programme. How technology can't detect the weather pattern.
- They brochure given needs to improve a fair bit less words more pictures.

Name	Nationality	Language Spoken
Philemon Suleman Boli	Sudanese	Arabic
Hassan Ibrahim	Sudanese	Arabic
Bobby Whiffield	Liberian	Liberian. Pigeon English French
Saharla Mohamud	Somalia	Arabic Somali, English
James Joe Orgem	Sudanese	Somali English



## Appendix 8      Notes NESH focus group meetings Melbourne June 2005

Name/Tel No.	Organisation	Date of visit	Address	Comment
Maurie Ramadan 58316953	Ethnic Community Council of Shepparton (languages Albanian, Turkish, Punjabi, Pakastani, Macedonian, Filipino	27-29th June to be confirmed	<a href="mailto:mramadan@mcmedia.com.au">mramadan@mcmedia.com.au</a>	Wants \$100 fee as its not the core business. Got contact through Sue (58215770) at Nth Shepparton Community Centre 309 Maude St
Naomi Paine and Grozdana Lukic 94847944	Northern Migrant Resource Centre Caldo-Assyrian, Sudanese, Somali, Macedonian, Chinese	Friday 1 <sup>st</sup> July 3 to 5pm and 6 to 8pm	<a href="mailto:naomip@mrcne.org.au">naomip@mrcne.org.au</a> 251 High St Preston	Sent a handbill to be displayed and promoted
Abdi Aden 93015340 0408554212 93057776	Somali Youth Group and the elders	Banksia Saturday 2 <sup>nd</sup> July at 1pm		Will pick people up with a mini bus...very helpful
Sahir Cinar 93795679	Kurdish Assoc of Victoria	Banksia Saturday 2 <sup>nd</sup> July at 1pm	<a href="mailto:Kurdish@alphalink.com.au">Kurdish@alphalink.com.au</a> 36 Fawkner Rd Pascoe Vale 3044	Organising to be at Banksia Gardens on the Saturday
Yuksel Calsilek 93037744	Aust Womens Turkish Friendly Assoc	Banksia Saturday 2 <sup>nd</sup> July at 1pm		
Anna Hall	Springvale Community Aid and Advice Bureau 95465255	See below	<a href="mailto:director@scaab.org.au">director@scaab.org.au</a>	52% of all residents have arrived in last five years Thought about it a while and preferred to refer to Neighbourhood House due to having clients with zero English
Jaya Manchikanti	Springvale Neighbourhood House 95483972	11am to 1pm Monday 4 <sup>th</sup> July	<a href="mailto:snh@satlink.com.au">snh@satlink.com.au</a>	Will send a letter to targeted groups and to settlement workers
Sultan Cinar 94197888	Islamic Womens Welfare Council	Inform of all of the above	<a href="mailto:iwwcv@vicnet.net.au">iwwcv@vicnet.net.au</a>	

The following are the notes taken from a series of consultations with NESH communities in Melbourne as follows:

3 Melbourne sessions were designed to have both a geographical and demographical spread.

Friday 1<sup>st</sup> July (11am) at Northern Migrant Resource Centre  
251 High St Preston, 3072

Saturday 2<sup>nd</sup> July (1pm) at Banksia Gardens Community Centre  
69-75 Pearcedale Pde Broadmeadows, 3047

Monday 4<sup>th</sup> July (11am) at Springvale Neighbourhood House  
46-50 Queens Ave, Springvale, 3171

These sessions were promoted through these and other community centres, ethnic community leaders, smaller groups and on SBS Radio and 3ZZZ.

### **Northern Migrant Resource Centre, Preston**

1st July, 2005

A large group of Somali women attended with two working as translators. Linda Anderson Berry, Kevin Parkyn of BOM and Douglas Goudie all presented, stopping at the end of each sentence to allow translation and feedback.

The women said that in Somalia they had neither experienced thunderstorms nor bushfires. Some had lived in the USA where they experienced tornadoes and rivers flooding, washing away buildings.

Doug presented the phone-tree diagram and explained the concept. After feedback about how useful a siren system would be the women agreed that a phone-tree would work in their community. They said that most Somali women have no mobile phone but do have a phone at home.

They also suggested that their children would readily translate weather warnings from English and that these children often brought home useful information via their schools.

Looking at the printed material, the women agreed that the information was very useful and that the warnings were very important, especially the warning about not allowing children to play in floodwaters.

### **Banksia Gardens Community Centre, Broadmeadows**

2<sup>nd</sup> July 2005

Representatives of the Turkish, Kurdish and Somali community were present. After presentations from Terry Hart of BOM and Doug the Turkish and Kurdish representatives talked about their experiences of floods and large hail in the local, Roxburgh Park, area.

There was a question about what to do whenever bushfires were approaching your house. The answer was that there was a general belief that if there are youth, elderly or infirm householders that they should leave early. Where there were fit house holders then the advice was to water down the house, stay inside as the fire passes and then put out cinders.

This led to feedback from the Somali representatives. Because of their experiences from their war-torn homeland the Somali people were used to fleeing the family home as a quick response to emergency situations. They would not try to save their house with a bushfire approaching.

In discussing what kind of a community education campaign would work for Somali people it was advised that the language used should be very authoritative, basically ordering them to act in certain ways. Brochures and broadcast material should use this style of language.

A question from the Turkish community was about the likelihood, if any, of a Tsunami type event in the Melbourne area. Doug answered by describing the huge floods in Melbourne in the mid 1930's. Other questions from the Turkish representatives included one about the large cracks that appear in the ground during dry weather and one about earthquake zones.

This discussion led to some information that a lot of ethnic communities use TV's with teletext for information; particularly for weather information. Husbands go fishing, we were told, and they check for weather warnings using teletext services.

The Turkish group returned a feedback form on the printed material stating that the phone tree would work effectively provided telecommunications services were still working. They also said that all the printed material was 'very informative and helpful' and that 'every home should be sent a copy'. One change suggested was to delete the statement that 'floods are fun and exciting'.

The Kurdish representatives thought that the printed material was very good and should make use of writing in point form. They thought the flood diagram was the best but found the others to be unclear.

### **Springvale Neighbourhood House**

July 4<sup>th</sup>, 2005

Communities with representatives here included those from the Middle East, El Salvador and South India.

The Middle Eastern representatives said that in their community everyone listens to ethnic radio, particularly SBS Radio, but also 3ZZZ and 3CR as well as Melbourne's privately owned Greek and Italian stations.

The issue that ethnic radio programming is for a 'tune in, tune out' audience with different language groups being targeted at different regular timeslots was highlighted

SBS Radio also presents the news and weather in their own languages. The feedback was also that once weather warning material was on the website in language then the ethnic media would promote this as a source of information. It was also suggested that SBS Radio and other ethnic broadcasters would read out the printed material in languages.

There was general support for the phone tree model and it was specifically stated that this would be used.

A great idea presented by this group was to use the churches and mosques because these are used, particularly by new arrivals, as a gathering point for information. Note also that the mosques have much longer hours operating from as early as 5am.

There was interest in learning what the BOM information strategy would be. With printed information being produced these could perhaps be sent to schools, TAFE Colleges and AMES (Adult Multicultural Education Service) for use in English teaching classes as educational material.

Richard Micallef  
14 Arnold Court  
Pascoe Vale, 3044  
93234837  
0418 897731

## **Appendix 9 Funding submissions to EMA for web NESH 'Dangerous Weather' portal, TV-ready flood simulation and 'dither and die' game development.**

EMA Use Only

### **Emergency Management Australia Research & Innovation Program**

#### **1. Title of Project:**

**Project 80/2005 –  
Web-based multilingual information on extreme weather  
threats and preparedness**

#### **2. Overview**

Please provide a brief summary of the project and its anticipated key deliverables (maximum 250 words)

#### **Develop and post to web, multilingual:**

**A. Printable information packs about Australian weather threats, and a**

**B. 10 minute interactive how-to instruction presentation on how to prepare  
for and survive a major weather threat, once alerted to the threat**

#### **Goals**

Making extreme weather threats more real and responses safety-oriented for recent, non-English speaking immigrants.

#### **Method**

This project will provide information packs and how-to guidance for recent, non-English speaking immigrants and refugees who may face extreme weather impacts.

Lead by Goudie (Attachment 1), this collaborative project includes the Bureau, CDS and SBS and others to deliver a well-publicised 'Weather Channel' on the 'Dangerous Weather web site' in 10 languages, explaining the three types of potentially destructive weather – flood, wind and fire. Tsunami will now need to be included – if you are near the shore and hear a great roar or see seawater receding, get upslope immediately.

## Outcomes

Delivery of print-ready e-brochures in 10 languages, with the site URL and explanation emailed to every Multi Cultural Organisation (MCO) in Australia, using central jurisdiction contact details, with those MCOs positioned to work with the web-accessed material.

Develop a web accessed 10-minute interactive program type information and education package about:

- A.** the three threats (destructive winds, fire weather, floods; plus tsunami),
- B.** making safe where you are,
- C.** moving early if necessary to greater safety,
- D.** not getting caught in the open, or driving into trouble.

- Fliers and pamphlets in an array of languages, appropriate to any recent-arrived languages mix will be available.
- Logos of the three core partners on all material.

Multicultural groups in Cairns and Brisbane have offered to help refine the content. The interactive 10-minute multilingual instruction video will be refined during community presentations of Goudie's findings to inform recently arrived non-English speaking immigrants and refugees of extreme weather impacts and safety responses.

This is a highly collaborative, major national project involving SBS, the Bureau, Emergency Management and the Centre for Disaster Studies. It will reach many thousand recent immigrants.

### 3. Budget Summary

Provide the total costs for the project.

<b>Phase of Project</b>	<b>Own Funds or In-kind Resources</b>	<b>EMA Funds (inclusive of GST)</b>	<b>Other funds (stipulate origin)</b>	
A. Refine printable material (Cairns)	\$6,000	\$6,000	\$-	
B Refine Multicultural organisations linking to web site (Brisbane)	\$12,000	\$6,000	\$-	
C (1) Hold hall meetings and video	\$5,000	\$-	\$-	
C(2) Shoot and edit remainder of video to 'master ready'	\$10,000	\$13,000		
D SBS to use masters to develop up to ten language translations or dubs	\$5,000	\$16,000	\$-	
E Post to web site(s) and promote	\$40,000	\$30,000	\$-	
	\$	\$	\$	<b>Total for project</b>
<b>Total</b>	\$78,000	\$71,000	\$	\$149,000

#### 4. Context and Benefit of the Project

Describe below the nature and scope of the issues that are to be addressed by the project: (maximum 250 words)

This web-based *multilingual weather threats and safety-oriented responses* project is a direct result of extensive Australian Research Council post-doctoral research of the Centre for Disaster Studies for the Bureau of Meteorology aiming to make weather warnings effective to non English-speaking households (Attachment 1).

With increased numbers of recent immigrants having little or no English skills (such as refugees from Somalia), arriving from often traumatic situations, this project will use the web access enjoyed by all Multicultural organisations (MCOs) to select languages as needed by specific MCO catchments to download and print information on natural weather hazards – flood, fire weather and destructive winds, as may be relevant to their area. This portal, based on the Bureau server and linked through such organisations as SBS or DIMIA will allow, with MCO advertising and training, easy access to needed background information on weather threats in Australia. The same site can link through to other hazards information for recent arrivals as deemed appropriate.

This project will engage the Migrant Settlement Service (Cairns) to help develop and test the wording of these three printable, simple hazard information sheets in 10 languages.

The other and allied section of this project will develop a simple on-web video where the MCO user will be able to select the looming hazard and needed language to inform recent NESH members of safety-oriented responses.

Volunteer Queensland will pioneer how to ensure MCOs are aware of, able and willing to use this material. The interactive (hazard and language choice) video material will be shot in Melbourne by a community-based media organisation (Attachment 2), delivered master-ready for a 10 minute total presentation covering safety strategies ahead of each of the three main weather-related hazards.

SBS will translate and dub as needed, making the print and viewing material widely known through a broad and ongoing advertising and promotion campaign (Attachment 3). Goudie will participate in that, as will the Bureau and Bureau personnel. This will mean that, using the web, MCO expertise and promotion of the material, recently arrived, non English speaking households can become informed of Australia weather hazards and how to maximise their safety. Side benefits may be that many other Australians use the site as well, and that there can be a more generic 'Australian hazards and safety issues meta-site' with this as a seeding core.



## 5. Project Methodology

Describe the proposed methodology: (maximum 250 words)

This project has five stages – material development, both for print and for interactive web material. Multicultural Settlement services Cairns will test and help refine print material through their staff and clients, Volunteers Queensland will work with FECCA, DIMIA and other peak state and national Multicultural organisations to develop an approach that ensures that, separated from SBS and the Bureau, all Australian MCOs are informed of and prepared to actively access the web site once ready to launch, with reminders factored in for November 2006 and 2007.

Goudie has met and consulted with representatives of 15 MCO and MC leaders in Nth Qld, Brisbane and Melbourne. The issues of weather warnings for NESH are well defined in terms of prior extreme weather event experience and uncertainty of responses. Goudie will present the threat range, 'phone tree model' (Attachment 4) and safety-oriented responses to 'hall scale' meetings of MCO representatives, MC leaders and NESH residents in Brisbane and Melbourne to refine the content of the print and 'video' messages prior to final handover of masters to SBS.

Working throughout with the Bureau, the masters will be translated (print ready 'threat information' fliers) and dubbed (web-accessed language/threat/ safety response). This web site (lodged within the Bureau server) will be widely promoted through MSS, VQ, DIMIA, the Bureau MCO parent organisations and SBS, with 'reminder' promotions each November in 2006 and 2007. Follow-ups, effectiveness surveys and upgrades may be warranted after 2006.

## 6. Timelines

Provide a timeline for the length of the project including major milestones

<b>Projected start</b>	<b>Activity</b>	<b>Comments</b>
Mid March	Meet with Multicultural Settlement Services, Cairns, to refine print material	Part of existing NESH consultative project with Bureau
Late April	Hold 'hall' meetings in Brisbane to test material, and further discussions with Volunteer Qld re ensuring multicultural organisations can be directed to and effectively use proposed web site.	Despite SBS and the Bureau undertaking to widely promote printable material and language-specific web site, we need to ensure that the MCOs are networked into accessing and fully using the site
Early June	Conduct 'hall' multi cultural meeting in Melbourne. Video for some 'group' material for the 10 minute 'what to do when high impact threatens.' Develop 'in studio' video and finalise masters.	Like much of the above, the full costs of organising these meetings will be born by the CDS.
Mid September	Launch site, after preliminary 'previews' and broad media promotion.	<p>The promotional budget will be staggered so that SBS will have waves of promotion in November 2005, 06 and 07 – ahead of the main weather impact season across Australia.</p> <p>If EMA wish, an effectiveness review can be funded early in 2007.</p>

## 7. Key Deliverables

Describe the expected key deliverables for the project: (maximum 250 words)

### A. Refine printable material (Cairns)

Multicultural Settlement Services (Cairns), with its wide cultural range of employees and clients, and an effective news letter, will help trial developing print material (an A4 sheet for each of flood, fire weather and destructive winds). Through newsletter mail outs, workshops and informal discussion, MSS will refine the printable 'fact sheets' ready for final testing in Brisbane and Melbourne.

### B Ensure multicultural organisations can and will link to web site (Brisbane)

Volunteers Queensland will undertake to develop a procedure to ensure that every MCO in Australia (perhaps working directly to DIMIA for contacts) will be made aware of the web site, and how MCOs should access and most effectively use that web site

### C Shoot and edit remainder of video to 'master ready'

With a calculated studio and editing suite time of two weeks, the outcome will be 'master ready' for SBS to dub into 10 languages. The interactive component of the piece will be: SELECT LANGUAGE, SELECT THREAT, HERE ARE THE RESPONSES – IF BASICALLY SAFE WHERE YOU ARE, MAKE SAFER AND STAY, IF BASICALLY VULNERABLE, MOVE EARLY TO A CLEARLY SAFER PLACE, DO NOT TRAVEL THROUGH THE HAZARD.

### D SBS to use masters to develop and web-post up to ten language translations or dubs

**Outcomes** **A.** web ready printable 'Know your Australian threats' – this will be designed so that other Australian threats: heat stroke, skin cancer, drownings, venomous wildlife, quarantine, terrorism may be linked in later if other agencies wish. **B.** Language and threat-specific choices of 'how-to' to maximise safety.

### E Post to web site(s) and promote

Without widespread awareness of this site and the developed 'push' via VQ efforts, the 'Australian threats' site will be another of millions. SBS is the premier multicultural information dissemination agency in Australia. They have assured us they will match dollar for dollar in free promotion.

Yours truly, Dr Douglas Goudie

Centre for Disaster Studies JCU

9/3/05

## Attachments

### Attachment 1 Team leader

**Dr Douglas Goudie**, a Human Geographer, has worked and taught in disaster risk management and hazard reduction, mainly in tropical north Queensland, Australia for ten years. Douglas conducted a three-year study into cyclone surge and transport route evacuation issues in Cairns, part of a team on all aspects of surge in Cairns. He is an Adjunct Lecturer in Sustainability Planning at James Cook University, and currently a postdoctoral researcher for the Australian Bureau of Meteorology into risk communication among remote Indigenous communities, and recent Australian immigrants with few English language skills.

He has conducted post-flood studies in 1997 and 1998 for the Queensland Emergency Services, three Disaster Risk Management Studies for Shires in Queensland, presented papers at regional, national and international conferences on flooding and risk communication, and is a founding member of the National Flood Risk Advisory Group, convened in July 2004 by Emergency Management Australia and the Australian Bureau of Meteorology.

### Related publications

- Goudie D, 1996. Early evacuation ahead of land-based and cyclone surge flooding. In (Ed) King D. *Flood management workshop proceedings*. Centre for Disaster Studies, JCU. NQ.
- Goudie D and King D 1999. Cyclone surge and community preparedness. *Austn. J. of Emergency management*. 13:1, 454-60.
- King D and Goudie D, 1998. Breaking through the disbelief - the March 1997 floods at Cloncurry. Even the duck swam away. *Aust. J. Em. Man.* 4:12, 29-33.
- Goudie D. 2003. A preliminary view of weather warnings and hazardous weather knowledge in Indigenous communities. *TCCIP Workshop paper for Safer Sustainable Communities 2003 Australian Disaster Conference, Canberra, 10-12 September 2003*. Published Bureau of Meteorology.
- Goudie D., 2004. More effective weather warnings for remote Australian Aboriginal communities in (ed BoM) International Conference on Storms. Storm science to disaster mitigation 11 Nat. Conf. Proceedings, 155-156. Austn Met and Oceanographic Society. AMOS Pub No 20.
- Goudie DD., 2004 Disruptive weather warnings and weather knowledge in remote Australian Indigenous communities. Web-based report  
[http://www.tesag.jcu.edu.au/CDS/reports/Gou\\_IWWRpt/index.shtml](http://www.tesag.jcu.edu.au/CDS/reports/Gou_IWWRpt/index.shtml)

## Attachment 2 Video production costs



ABN 71236349892

### Brown Cat Productions

27 Hope Street, Preston, 3072  
email: plane@alphalink.com.au  
mob: 0407 117737

**QUOTATION: Video Production Budget Summary**  
**For “Web-based multilingual information on extreme weather impacts and safety maximisation” submission by**  
**D. Goudie, Australian Centre for Disaster Studies, JCU Townsville, to**  
**Emergency Management Australia Research & Innovation Program**

**Production of English Language Master of 10 minute multicultural instruction video presentation providing threat information.**

Development, pre production, client liaison	
Scripting	
Melbourne Venue coordination	
Media archive assets	
Production Management	3,000
Record Goudie presentation to multicultural ‘hall’ meetings with live audience	1,000
Record Goudie presentation ‘in studio’	3,000
Assess and process multimedia/graphic supporting material to be supplied	
Non language specific threat signs	
Multi media Meteorological representations	1,000
Stock, transfers, titles	
Sound edit and sweetening, music	
Transforming graphics and multimedia support material	1,500
Editing to Master	3,500
Delivery Items	
One English language master with English Titles	
One English language master without Titles	
<b>Total Budget (GST Inc.)</b>	<b>\$13,000</b>

With thanks,  
**Peter J Lane**  
Director

### **Attachment 3     SBS budget overview**

A two voice 10 minute instructional piece including translation, talent, production and providing a completed sound track to be mixed with the music and effects would run to around \$1200 per language. The campaign component would come in at around \$20 - \$30k for 10 languages nationally - SBS would also contribute a significant in kind amount. We would also provide the information our website as well as any links required. Website: Banners on homepage and language pages with link to site holding language specific information. Commercial value \$5,000 per month. Propose 6 mth initial agreement pending ongoing relationship. Value \$30,000

Airtime: 40% bonus activity. ie: \$20k media spend with additional \$8k bonus activity at no charge. Please note that there can be no in kind on production services as these represent real costs to SBS. Prices do not include GST.

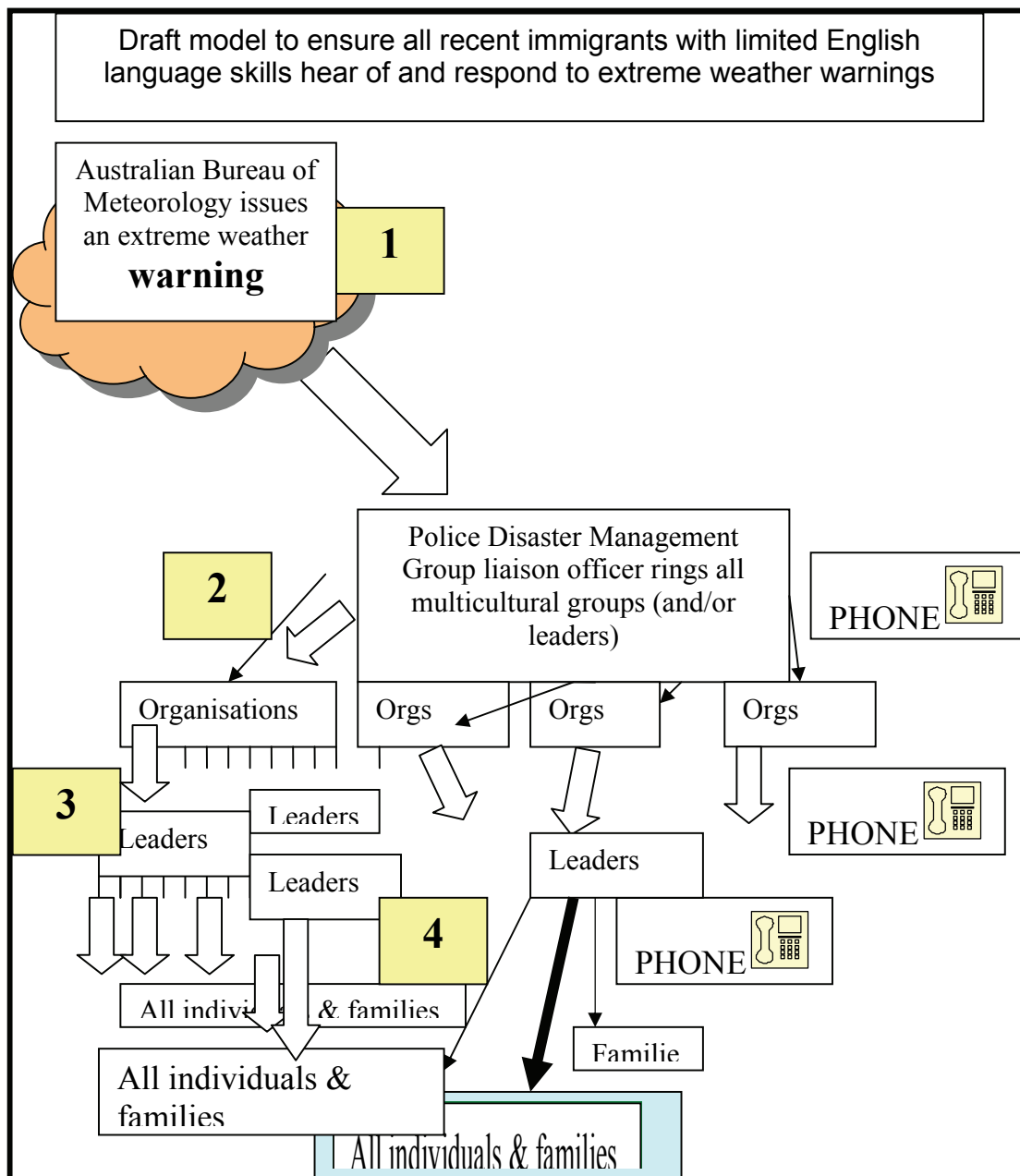
Regards,  
Michael.

Michael Smith  
SBS Radio Melbourne  
Sales and Marketing Manager  
Tel: 9949 2300 / 0408 366 313

EMA are encouraged to contact Michael if they require a more detailed budget breakdown.



## Attachment 4 Draft phone tree model



## **Attachment 5      Submitted EMA funding Applications**

### **EMA Research & Innovation Program – Expression of Interest Form**

#### **1. Applicant Details**

**Organisation (s):** Centre for Disaster Studies James Cook University (T/ville)  
Bureau of Meteorology

**Contact Person (for expression of interest):**  
Douglas Goudie

**Address:** TESAG. JCU, Townsville, Q. 4811.

**Telephone:** 07 47814913

**Fax:** 07 47814020

**Email:** Douglas.Goudie@jcu.edu.au

**Researcher name(s) and position details:**  
Dr. Douglas Goudie, Research Associate, James Cook University

<b>This CDS application 2 is for two small scoping studies 2A&amp;B for Games development - \$9000</b>
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## 2. Summary of proposed project

Centre for Disaster Studies, with the Bureau of Meteorology, wish to develop ways to increase risk perception and influence people's behaviour by providing information to the general public, including safety-oriented responses to extreme weather warnings. This small grant application is one of a number provided to EMA flowing from research by Goudie, viewed at [http://www.tesag.jcu.edu.au/CDS/reports/Gou\\_IWWRpt/index.shtml](http://www.tesag.jcu.edu.au/CDS/reports/Gou_IWWRpt/index.shtml)

### CDS scoping study 2 *Master Disaster Faster game*

2 A 'Weathering wild weather' board game; and scope computer game development	
Requested \$9,000 In kind \$9,000	
To develop	Method outline
2A. A potentially <b>commercially viable board game</b> of Disruptive weather impact preparedness: Weathering wild weather/Master Disaster Faster/ Dither and Die'	CDS and Bureau develop game to 'commercialisation-ready', then seed fund commercialisation (\$6000)
2B. A computer game design criteria and sample of 'Weathering wild weather/ dither and die'/ 'Master Disaster Faster' game	Develop computer game design criteria and sample. A computer games developer will be employed. (\$3000)

## 2A Board game

### Rationale

The goal is to develop a board game design and detail to a 'commercial-ready' stage. We want 'commercial ready' as a measure of its likely attraction in the market place, that as an indicator of how likely people will be to WANT to play it. If it is deemed marketable, IP and royalty issues will be clarified, with any profits presumably split between CDS, Bureau and EMA for further research. This is a scoping study. If the game development is deemed attractive, it will be promoted through schools, drawing on distribution techniques developed in the Stormwatchers project. Web distribution may be possible. After much 'risk communication' literature search and research with remote Indigenous and NESH community representatives, and working on the EMA-supported philosophy that reaching school children is a good conduit to helping adults understand warnings, risks and safety responses, these game developments work on the idea that:

### Game principles

1. where you live is intrinsically basically safe to the forecast threat (able to withstand destructive winds, above any flood – or tsunami – level, reasonable able to survive a bush fire), so that players, faced with a threat, can make secure where you are)
2. Where you live is likely to be intrinsically dangerous to the forecast threat, in which case residents move early to intrinsically safer shelter
3. The calamitous aspects of the game occur if your residence is basically unsafe and you stay there (do nothing) OR you wait too long to seek appropriate shelter, and get caught in transit in the cyclone/flood/fire ("dither and die").

- Points one and two can generate much drama, but three can be quite gory.

### D&D GAME - Age 6 + to Adults

**Game goal** – to end up at home, safe, with undamaged family and possessions – and with the most ‘wellbeing’ credits.

**The game winner is the one who ends up home (or back home) safe with the most wellbeing credits.**

**Game components** – board, rotating ‘impact intensity meter’, three sets of cards – fire, damaging winds, flood, and a stack of TASK cards

Players start at home, with 500 wellbeing credits (like paper money, in denominations) each.

### **Game rules.**

Players have their own counter, which they move around the board. They take it in turns to throw one dice, moving the counter accordingly. Play is clockwise, passing turns to the left.

- A. The first throw of the dice will tell you what threat you face during the game: flood (x3), fire or destructive wind squares. The sixth square will be ‘cyclone’. If you live in a non-cyclone or fire-possible area, re-throw the dice to start on a threat possible in your region.
- B. Once you know the threat you face, on your next turn throw the dice to tell you what kind of house you live in:
  - 1- ‘Gullyhouse’ (at risk of flood or bushfire), 2 -‘Bushhouse’ (at risk of bushfire) or any of four ‘suburban houses’ 3 - Strong house, 4 - wobbly weak house, 5 - house with sick neighbours, 6 junk-yard house with lots of rubbish and building materials around it. Even the suburban houses have people who may be at risk of dangerous behaviour, wind damage or cyclone impact if in cyclone area.
- C. If you throw a 1 – 3 you may move in any direction up to the number of squares on the dice. If you throw a 4, pick up a TASK card; 5 or 6 you stay put and pick up a hazard card either flood, fire or windstorm – and follow the instructions.

Once you know your threat (cyclone is wind AND flood) and which is your home, you are read to pick up your first task card and then throw the dice to start moving around the board.

You cannot move diagonally.

Destinations have points – shops 50, Hospital 100 etc.

The board will be a little like snakes and ladders and monopoly combined, with a single dice throw per turn. The first throw will identify, from the start point of the

board (home, safe), whether the forecast threat you are 'playing' is flood, fire, destructive winds – with three of the six possibilities being flood – the most likely threat Australian households will face. The sixth possibility will be cyclone, but people outside the cyclone zone can re-throw the dice if they chose to not play the cyclone options.

## **2B Detail**

### **Weathering wild weather computer game**

In its essence, Dither and Die on computer will take the many possible scenarios created by the board game, expand and visualise them, and use the multiple range of choices made possible by computerised game play to make the character's choice the catalyst behind the resulting scenarios the character faces, substituting the dice based scenario creation of the board game. This instils the user with a sense of the importance that the actions they take have on their chances of survival, before, during and after an environmental disaster.

This game is already well advanced and a graphic and games artist already contacted.

#### **In-kind contribution**

Douglas is already employed full time by the Centre for Disaster Studies, conducting research with the Bureau of Meteorology to develop more effective weather warnings, both in remote Indigenous communities (see above) and for recent, non – English speaking immigrants and refugees. The Centre and the Bureau are committed to developing these projects, representing a great in-kind contribution, largely removing the need for travel and accommodation expenses. The research funds through the large Australian Research Council project underwrites the funding support sought to meet the 'action research' recommendations arising from this ARC linked research into maximising community hazard awareness and community safety.

### **3. Research capability**

Please provide a summary of your relevant research interests and experience in emergency management and related fields (max. 200 words)

I have conducted a three year TCCIP transport and surge evacuation project for Cairns,

([http://www.ema.gov.au/agd/EMA/rwpattach.nsf/viewasattachmentpersonal/\(85FE07930A2BB4482E194CD03685A8EB\)~Cyclone\\_surge\\_and\\_community\\_preparedness.pdf/\\$file/Cyclone\\_surge\\_and\\_community\\_preparedness.pdf](http://www.ema.gov.au/agd/EMA/rwpattach.nsf/viewasattachmentpersonal/(85FE07930A2BB4482E194CD03685A8EB)~Cyclone_surge_and_community_preparedness.pdf/$file/Cyclone_surge_and_community_preparedness.pdf)), conducted two post-flood surveys in North Queensland for DQES, conducted three disaster risk management studies in Queensland and am currently on a three year post-doctoral ARC linkage project with the Bureau of Meteorology. The CDS has numerous educators, and the Centre developed the Stormwatchers education DVD.



**Australian Government**

**Attorney-General's Department**

**Emergency Management Australia**

**4. Relevant research grants**

Please provide a list of other relevant funding or research grants (and the details of the funding agency) obtained for projects undertaken in emergency management and related fields (if applicable).

<b>Funding body</b>	<b>Year (s)</b>	<b>Approx value m(\$)</b>
TCCIP-	1995-97	9000
QDES -	1997 &8	4000 x 2
McKinley Shire	2000	25,000
Mt Isa CC	2002	25,000
Eidsvold Shire	2003	25,000
Bureau/ARC	2003 – 2005	200,000

**Applicant declaration**

I consent to the release of information in this expression of interest (excluding personal details and prior funding payments) for non-commercial public information purposes.

Name: Douglas Goudie

Signature:

Position in organisation: Research Associate

Date: 3/08/2009

3

EMA Use Only

**EMA Research & Innovation Program – Expression of Interest Form****5. Applicant Details**

**Organisation (s):** Centre for Disaster Studies James Cook University (T/ville)

**Bureau of Meteorology**

**Contact Person (for expression of interest):**

**Douglas Goudie**

**Address:** Tesag. JCU, Townsville, Q. 4811.

**Telephone:** 07 47814913

**Fax:** 07 47814020

**Email:** Douglas.Goudie@jcu.edu.au

**Researcher name(s) and position details:**

**Dr. Douglas Goudie, Research Associate, James Cook University**

<b>This application 3 from the CDS is to develop a pilot flood simulation – Logan City - \$40,000</b>
---

## **6. Summary of proposed project**

Please provide a brief summary (maximum one page in length) of your proposed project.

The Centre for Disaster Studies, with the Bureau of Meteorology, Landmark and Logan City Council wish to develop ways to increase risk perception and influence people's behaviour by providing information to the general public, including safety-oriented responses to extreme weather warnings. This grant application on developing a flood simulation over the Logan River catchment is one of a number provided to EMA flowing from research by Goudie, viewed at [http://www.tesag.jcu.edu.au/CDS/reports/Gou\\_IWWRpt/index.shtml](http://www.tesag.jcu.edu.au/CDS/reports/Gou_IWWRpt/index.shtml).

### **Rationale**

GIS based extreme impact simulations as a key component of future effective warnings are inevitable. The detail of how they are done is not yet formalised. Logan City Council Flood Plain Manager and Ken Granger, Landmark, are partners in this project, using Grangers high expertise in animating GIS based flood data (see ref, p 4) to powerful effect.

In the infancy of developing publicly effective extreme impact simulations, this project, in a highly urbanised area (about 85% of Australians are urban dwellers) will compliment and inform any other leading edge simulation development projects in Australia, and provide a competitive test of methodologies for best evolving approaches.

### **CDS/Bureau/Logan City Flood simulation**

3. Pilot flood simulation for Logan City
--

<p>Requested: \$40,000 – software and computer manipulation fees, travel, accommodation and trialling with Council, developers and residents. Promotion of simulation on LCC and Bureau web site and the media.</p> <p>In-kind \$40,000. Developed software frame to achieve simulation, already-captured digital and flood data. Overlaps with existing public education and flood awareness projects in Logan City.</p>
---

WW project development number: CDS	To develop	Method outline	Cost
3	<b>Develop simulations</b> of flood, wind or fire impact spread for media use. Start to develop crude simulations of major floods or destructive wind paths to attach to related extreme weather warnings – pilot of flooding for the Logan City area	Work with Manager, Logan City Floodplain and Ken Granger to develop simulation of flooding grading up to PMF for Logan City area	\$40,000



### Project 3

#### **Develop simulation to Probable Maximum Flood, Logan City area.**

Simulations for use on television or for web access brings a powerful set of moving images of disaster impact over simulation of a real and threatened environment.

This helps make the threat real to those at risk, a core and necessary step in motivating people to move to maximise their own safety.

This proposal is to develop a two minute simulation of flooding rains in the Logan City catchments ([http://www.logan.qld.gov.au/NR/rdonlyres/9D47FDA5-70F7-49A1-B093-577523228194/0/map\\_da\\_4\\_20000.pdf](http://www.logan.qld.gov.au/NR/rdonlyres/9D47FDA5-70F7-49A1-B093-577523228194/0/map_da_4_20000.pdf)) to continue through torrential rains through 1 in 5, 10, 20, 50, 100, 500 year annual exceedance probability to a PMF, with some local cloudbursts . If small localised flash flooding could also be modelled, this exercise will be doubly productive.

The design specifications, ideally, will be that the software for incremental flooding will be able to be laid over ANY digital evaluation topography. For instance, if there is a major flood is predicted for Sydney, the program would be able to drape over the Sydney ground elevation model to produce realistic flood stages.

“Logan City Council supports and welcomes the opportunity to participate and assist the efforts of the Centre for Disaster Studies at James Cook University in the development a flood simulation model that would enhance Council's ability to raise its Community's flood awareness and assist in its ongoing Community education programs”. Lou Kamenos, Logan City Council Programming Engineer

Ken Granger, Landmark, (CV extracts below), has expressed his firm interest in this project, and is already working with Lou Kamenos, LCC, to enhance flood awareness. Lou has a great bank of digital elevation and flood data and ‘static’ flood modelling, allowing Ken to focus on software development rather than data collection. With credit going to the Council for *partnering this radical and inevitable step to make impending impacts real to those at risk*, there is Council support, and the support of his Gold Coast counterpart.

#### In-kind contribution

With Ken’s world-leading simulation expertise and the considerable data needed already largely available from the Logan City Council, the existent in-kind contribution to this inevitable kind of ‘realistic’ warning will make this project a path-breaker to the many that will follow. Douglas is already employed full time by the Centre for Disaster Studies, conducting research with the Bureau of Meteorology to develop more effective weather warnings, both in remote Indigenous communities (see link, near top p2) and for recent, non – English speaking immigrants and refugees. The full resources of the Centre and the Bureau are committed to developing this project, representing a great in-kind contribution. The research funds through the large Australian Research Council project underwrites the funding support sought to meet the ‘action research’ recommendations arising from

this ARC linked research into maximising community hazard awareness and community safety.

#### 7. Research capability

Please provide a summary of your relevant research interests and experience in emergency management and related fields (max. 200 words)

I have conducted a three year TCCIP transport and surge evacuation project for Cairns,

([http://www.ema.gov.au/agd/EMA/rwpattach.nsf/viewasattachmentpersonal/\(85FE07930A2BB4482E194CD03685A8EB\)~Cyclone\\_surge\\_and\\_community\\_preparedness.pdf/\\$file/Cyclone\\_surge\\_and\\_community\\_preparedness.pdf](http://www.ema.gov.au/agd/EMA/rwpattach.nsf/viewasattachmentpersonal/(85FE07930A2BB4482E194CD03685A8EB)~Cyclone_surge_and_community_preparedness.pdf/$file/Cyclone_surge_and_community_preparedness.pdf)), conducted two post flood surveys in North Queensland for DQES, conducted three disaster risk management studies in Queensland and am currently on a three year post-doctoral ARC linkage project with the Bureau of Meteorology.

#### 8. Relevant research grants

Please provide a list of other relevant funding or research grants (and the details of the funding agency) obtained for projects undertaken in emergency management and related fields (if applicable).

Funding body	Year (s)	Approx value m(\$)
TCCIP-	1995-97	9000
QDES -	1997 & 8	4000 x 2
McKinley Shire	2000	25,000
Mt Isa CC	2002	25,000
Eidsvold Shire	2003	25,000
Bureau/ARC	2003 – 2005	200,000

Ken Granger's CV selected extracts

Ken Granger is an applied geographer with 44 years experience in the capture, analysis and application of spatial information to address issues and solve problems in the public safety field. He has established a national and international reputation as a leader, manager, risk scientist and communicator and a passionate advocate for fostering safer and more sustainable communities. His training and experience is underpinned by a personal philosophy that it is better to inspire action than to simply give advice.

2003 Susanne Schmall, Ken Granger, Graham Shorten and Purnima Naidu:  
'Blending custom knowledge and science to reduce risk in three settlements near Port Vila, Vanuatu', *Proceedings 2003 Australian Disaster Conference*, Canberra.

2002 Ken Granger: 'Floods, information and GIS: improving our understanding of flood risk', in D.I. Smith and J. Handmer (editors) *Residential flood insurance: the implications for floodplain management policies*, Water Research Foundation of Australia, Canberra.

The 2003 publication reports a cyclone surge simulation, and the immediate resultant change in village planning and hazard preparedness.

**Applicant declaration**

I consent to the release of information in this expression of interest (excluding personal details and prior funding details) for non-commercial public information purposes.

Name: Douglas Goudie

Signature:

Position in organisation: Research Associate

Date: