



**Driving Innovation in Crisis Management for European Resilience**

## **D35.1 - Best Practice In Communication for Civil Society Resilience**

Document Identification	
Due Date	30/04/2015
Submission Date	01/02/2017
Status	Final
Version	3.0

Related SP / WP	SP3 / WP35	Document Reference	D35.1
Related Deliverable(s)	D350.2, D350.3	Dissemination Level	PU
Lead Participant	Q4PR	Lead Author	Peter MacDonagh
Contributors	USTUTT, ARC, CIES	Reviewers	Gerald Czech (ARC)
			Noomi Egan (MSB)
			Michael Löscher (FHG-INT)

### **Keywords:**

**Communication, Civil Resilience, Crisis Communication, Risk Communication, Best Practice, Case Studies, FP7 Research**

This document is issued within the frame and for the purpose of the DRIVER project. This project has received funding from the European Union's Seventh Framework Programme (FP7/2007-2013) under Grant Agreement No. 607798

This document and its content are the property of the DRIVER Consortium. All rights relevant to this document are determined by the applicable laws. Access to this document does not grant any right or license on the document or its contents. This document or its contents are not to be used or treated in any manner inconsistent with the rights or interests of the DRIVER Consortium or the Partners detriment and are not to be disclosed externally without prior written consent from the DRIVER Partners.

Each DRIVER Partner may use this document in conformity with the DRIVER Consortium Grant Agreement provisions.

## Document Information

List of Contributors	
Name	Partner
Peter MacDonagh	Q4PR
Michelle Comer	Q4PR
Martin Mackin	Q4PR
Ruth O'Byrnes	Q4PR
Sinead McGovern	Q4PR
Ekaterina Dobrokhotova	USTUTT
Willi Wendt	USTUTT
Christian Kloyber	ARC
Aideen Elliot	CIES
Sadbh McCarthy	CIES

Document History			
Version	Date	Change editors	Changes
1.0	2015-03-31	Q4PR	
1.1	2015-12-07	Q4PR	Revised draft for review. Revised chapters. Expanded methodology section. Inclusion of feedback from end-users concerning core concepts and functioning principles. Closer linking to broader DRIVER work. Additional data referenced.
1.2	2016-01-22	Q4PR	Revised draft to project coordinator
2.0	2016-02-29	ATOS	Quality check performed on this document
2.1	2017-01-13	Q4PR	Redraft, improved synthesis of principal points, removal of non-core material, addition of new research references, expanded explanation of end-user interviews, range of editing changes for greater clarity and consistency, clearer identification of practice gaps to be addressed.
2.2	2017-01-15	FHG-INT	Review & Comments
2.3	2017-01-16	Q4PR	Response to review comments. New section on link to DRIVER ongoing work, smaller editorial changes,
3.0	2017-02-01	DLR, ATOS	Quality check performed on this document

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	2 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

# Table of Contents

Project Description .....	8
Executive Summary .....	9
1 Introduction and Definitions .....	11
1.1 Defining Communication for Civil Society Resilience .....	11
1.2 Review Approach and Structure .....	12
1.2.1 Basic Approach .....	12
1.2.2 Structure of the Review .....	13
2 A Diverse field – Defining and Summarising the Research Base .....	14
2.1 Defining the field – Risk, Crisis and Resilience Communications .....	14
2.2 Understanding the Research Base .....	17
2.3 Defining Phases of Communication .....	20
2.4 The Central Importance of Individual Perception of Risk .....	21
2.5 The European Dimension .....	22
3 Five Core Concepts which Underpin Communication for Civil Society Resilience .....	24
3.1 Underpinning Concepts for Effective Communication .....	24
3.1.1 Trust .....	25
3.1.2 Context .....	26
3.1.3 Diversity .....	26
3.1.4 2-Way .....	27
3.1.5 Relationships .....	27
4 13 Actioning Principles which Define Best Practice .....	28
4.1 Using Crisis Management Phases – Prepare, Respond, Recover .....	28
4.2 13 Actioning Principles .....	29
4.3 Prepare .....	30
4.3.1 Understand .....	30
4.3.2 Educate & Engage .....	31
4.3.3 Plan .....	32
4.4 Respond .....	33
4.4.1 Fast, Honest & Accurate .....	33

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	3 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

4.4.2	All Available Channels .....	34
4.4.3	Empathy not Reputation .....	35
4.4.4	Monitor and Engage .....	35
4.4.5	Extra Information .....	36
4.4.6	Expand Capacity .....	37
4.4.7	Cooperate and Share .....	37
4.5	Recover .....	38
4.5.1	Keep Providing Information .....	38
4.5.2	Keep Monitoring & Engaging .....	39
4.5.3	Evaluate .....	39
5	How far is recommended best practice implemented? .....	40
5.1	Acceptance of 5 Underpinning Concepts in overall strategies .....	40
5.1.1	Overall Assessment .....	40
5.1.2	Important developments at overall level .....	41
5.2	Acceptance of 13 Actioning Principles in Strategies and Practice .....	42
5.2.1	Overall Assessment .....	42
5.3	Preparedness .....	46
5.3.1	Understand – stakeholder & general research .....	46
5.3.2	Educate & Engage .....	47
5.3.3	Plan .....	48
5.4	Response .....	50
5.4.1	Fast, Honest, Accurate .....	50
5.4.2	All Available Channels .....	51
5.4.3	Empathy not Reputation .....	52
5.4.4	Monitor & Engage .....	53
5.4.5	Extra Information .....	53
5.4.6	Capacity .....	54
5.4.7	Cooperate & Share .....	54
5.5	Recovery .....	55
5.5.1	Keep Providing Information .....	55
5.5.2	Keep Monitoring & Engaging .....	56
5.5.3	Evaluate .....	56

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	4 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

6	Conclusion: Turning theory into practice.....	57
7	Communications in DRIVER's future work.....	60
	References.....	62
	Annex 1: Methodology & Sources for Review.....	76
	Annex 2: Key Ongoing Developments in Communications Practice .....	79
	Social Media.....	79
	Mobile Applications.....	80
	Media Relations .....	83
	Early Warning/Alerting Systems .....	84
	The Role of the EU .....	84
	The Role of Standards.....	85
	Message Framing in Crisis Communications .....	86
	Best Practice Tools.....	88
	Annex 3: Case Studies .....	90
	Budapest Severe Storms August 2006 & August 2007 .....	90
	Scottish Resilience Surveys .....	92
	Humber (UK) Tidal Surge 2013 .....	94
	2007 UK Floods .....	96
	Ice Storm Slovenia 2014 .....	98
	Central European Floods 2002 & 2013 – Saxony.....	100
	Hurricane Sandy (New York) 2012.....	103
	Great East Japan Earthquake.....	106
	New South Wales Bushfires 2013.....	109
	H1N1 Influenza Pandemic 2009.....	111
	Annex 4: Risk Perception and Preparedness Levels in Europe.....	114
	Pan-EU Surveys .....	114
	National Surveys .....	117

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	5 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## List of Tables

Table 1: Characteristics of Risk and Crisis Communication (Adapted from Reynolds & Seeger 2005)	15
Table 2: Summary of Factors Influencing Responsiveness to Warnings (Sorenson as adapted by Demeritt et al 2011)[34]	22
Table 3: Acceptance of 5 underpinning concepts in practice	41
Table 4: Acceptance of 13 Actioning Principles	44
Table 5: Relevance of proposed solutions to identified gaps	61
Table 6: End-user interviews conducted for review	76
Table 7: Templates for Risk & Crisis Communication Messages (Adapted from Covello, 2002.)	87
Table 8 SpEB 328 (2009) – ‘What disasters do you feel at risk from in (this country)?’	115

## List of Figures

Figure 1: Phases of Research on Risk Communication according to Sandman & Covello (2001)	18
Figure 2: Phases of Communication Practice	18
Figure 3: Phases of Disaster Management (adapted from Moe and Pathranarakul 2006)	20
Figure 4: Underpinning Concepts for Effective Communications	25
Figure 5: Cycle of Communication for Civil Society Resilience	28
Figure 6: Actioning Principles of Effective Resilience Communication	29
Figure 7: ‘Fire Ready’ Mobile App State of Victoria, Australia	81
Figure 8: ‘Ready Scot’ Mobile App	82
Figure 9: ‘Alertes Citoyen’ Mobile App	82
Figure 10: Weather Alert Maps 20 Aug 2006 (left) and 20 Aug 2007 (right) (source: HMS)	90
Figure 11: Bridlington Harbour 5/12/13 (source: HumberLRF)	94
Figure 12: Ice Storm, Slovenia 2014 (source THW)	98
Figure 13: Google Map „Hochwasserhilfe Dresden / flood relief Dresden“	102
Figure 14: Risk and Crisis Communications Channels over Time (source: Office of the Prime Minister of Japan, 2012)	107

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	6 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## List of Acronyms

Abbreviation / acronym	Description
CCC	Crisis Communication Centre
CDC	United States Centers for Disease Control and Prevention
DRR	Disaster Risk Reduction
EC	European Commission
ERCC	European Response Coordination Centre
EU	European Union
FEMA	Federal Emergency Management Agency
FP7	7 <sup>th</sup> Framework Programme for Research and Technological Development
GEJE	Great East Japan Earthquake 2011
HFA	Hyogo Framework for Action 2005-15
IFRC	International Federation of Red Cross and Red Crescent
ITIC	International Tsunami Information Centre
ITU	International Telecommunications Union
OECD	Organisation for Economic Cooperation and Development
SFA	Sendai Framework for Action 2015-25
SOTA	State of the art
UN	United Nations
UNISDR	United Nations International Strategy for Disaster Reduction
WHO	World Health Organisation
WMO	World Meteorological Organisation

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	7 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Project Description

DRIVER evaluates solutions in three key areas: civil society resilience, responder coordination as well as training and learning.

These solutions are evaluated using the DRIVER Test-bed. Besides cost-effectiveness, DRIVER also considers societal impact and related regulatory frameworks and procedures. Evaluation results will be summarised in a roadmap for innovation in crisis management and societal resilience.

Finally, looking forward beyond the lifetime of the project, the benefits of DRIVER will materialize in enhanced crisis management practices, efficiency and through the DRIVER-promoted connection of existing networks.

### DRIVER Step #1: Evaluation Framework

- Developing Test-bed infrastructure and methodology to test and evaluate novel solutions, during the project and beyond. It provides guidelines on how to plan and perform experiments, as well as a framework for evaluation.
- Analysing regulatory frameworks and procedures relevant for the implementation of DRIVER-tested solutions including standardisation.
- Developing methodology for fostering societal values and avoiding negative side-effects to society as a whole from crisis management and societal resilience solutions.

### DRIVER Step #2: Compiling and evaluating solutions

- Strengthening crisis communication and facilitating community engagement and self-organisation.
- Evaluating solutions for professional responders with a focus on improving the coordination of the response effort.
- Benefiting professionals across borders by sharing learning solutions, Lessons learnt and competencies.

### DRIVER Step #3: Large scale experiments and demonstration

- Execution of large-scale experiments to integrate and evaluate crisis management solutions.
- Demonstrating improvements in enhanced crisis management practices and resilience through the DRIVER experiments.

DRIVER is a 54 month duration project co-funded by the European Commission Seventh Framework Programme (FP7/2007-2013) under grant agreement no. 607798.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	8 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



## Executive Summary

The promotion of resilience in civil society is a complex field and communications are an essential part of achieving its objectives. This review aims to provide an accessible guide to the key issues and actions identified as effective in research and practice in communication for civil society resilience.

The principal intended audience is people who work within organisations which are involved at any stage of the crisis management cycle. It is a practice and policy-focused review which proposes a framework in which to draw together diverse underpinning concepts and actioning principles, link them to specific actions and assess their status within current strategies and practices in Europe.

DRIVER is a project which seeks to support key elements of a new culture of active innovation to assist resilience in Europe. Its particular focus is on resilience to major natural disasters. This review maintains this focus.

The review has been shaped by a defined understanding of the overall status and needs of this field of practice. Specifically:

1. Communication is central to Crisis Management and Civil Society Resilience objectives
2. Research to practice is a key gap
3. A diverse field of practice requires a focus on Core Principles

The core part of this review is structured in the following way:

4. It defines key terms and gives an overview to the diverse research base underpinning this area.
5. It brings together this work into 5 concepts which underpin effective communication for civil society resilience.
6. 13 principles to guide the implementation of best practice before, during and after crises are detailed.
7. Drawing on a diverse range of sources, an assessment is made on how far the identified best practice is being acknowledged and implemented in Europe.

Following a list of conclusions which relate to addressing identified needs details are provided of further communications-related work in DRIVER targeted specifically at addressing concepts and actioning principles which have been identified as having an unclear level of acceptance in strategies and practices.

The overall assessment is that there is a period of significant innovation and practice development underway in the field of communication for civil society resilience. In Europe there is a high level of acceptance at strategic level of three of the five underpinning concepts. Seven of the thirteen identified actioning principles appear to play a substantial role in practice.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	9 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

There is a widespread acceptance of the need to move away from a traditional ‘command and control’ approach to communications – a **dynamic which has been enhanced by the impact of social media and other online activity.**

The lack of a systematic approach to the reporting and evaluation of communications activity in this field is a major barrier to understanding the nature and impact of practice. There is no evidence that the levels of funding and activity are sufficient to achieve the preparedness objectives of resilience policy.

The appendixes include details of the work undertaken for this review and ten brief case studies setting out important communications learning from a range of incidents and policies. In addition appendixes are included which note some major areas of practice development and the current understanding of risk perception and public opinion in Europe concerning natural disasters.

This Deliverable has been renamed from 'Analysis and review of existing crisis communication plans and strategies' in order to better reflect the research on civil society resilience addressed through SP3. This change is reflected in the project's revised description of work.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	10 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

# 1 Introduction and Definitions

The European Commission, in reviewing expanding roles and expectations in civil protection, has called for “*systematic actions to raise public awareness of risk and improve risk and crisis communication*” [46]. This is an important statement of policy and brings with it a challenge to evolve a shared understanding and practice.

While this is an area with a broad and deep research base, the impact of this research on practice is inconsistent [121, 128, 92 66]. In order to shape a state of the art (SOTA) review which would address this in greater depth, the first work of this review involved a series of structured interviews with crisis management personnel at regional, national and international levels [Annex 1: Methodology & Sources for Review]. A consistent feedback from interviewees was that much work is viewed as inaccessible and material easily understood by ‘non-experts’ would be of substantial interest. In addition, there is little appreciation of current practice in other countries other than where there is a formal cooperation arrangement in place (such as for flood warning). There is no established ‘community of users’ in place outside of specific alerting tasks.

With this as the context, this review has seeks to provide an accessible guide to best practice as it is identified in both research and practice in communication by public authorities with the public before, during or after a disaster. It aims to provide a structured framework which can help support greater interaction between and within organisations and countries.

## 1.1 Defining Communication for Civil Society Resilience

Resilience is a concept which is widely used in a variety of different fields and, therefore, it is important to define exactly how it is being used in this aspect of DRIVER’s work. In D310.21 (State of the art and Conceptual Framework for Civil Society Resilience) different approaches have been reviewed and the definition of resilience used by the International Federation of Red Cross and Red Crescent Societies (IFRC) is adopted as being most appropriate:

### Definition of Civil Society Resilience

*“the ability of individuals, communities, organisations, or countries exposed to disasters [...] to: (a)anticipate, (b)reduce the impact of, (c)cope with and (d)recover from the effects of adversity without compromising their long term prospects”.*

Subproject 3 (SP3) of DRIVER addresses civil society resilience separately from the technical considerations of crisis management. In the crisis management context, civil society resilience is therefore taken as referring to actors outside the professional response such as individuals, communities or cities [38].

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	11 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

A recent substantial review of literature on communication concerning disasters and pandemics has identified a rising use of resilience in relevant communications research [195]. This usage is broadly consistent with the IFRC definition.

### Definition of Communication for Civil Society Resilience

Communication for civil society resilience is here referred to as communication by public bodies, or NGOs working to a public mandate, during all phases of the crisis management cycle in order to assist civil society to anticipate, reduce the impact of, cope with and recover from the effects of adversity without compromising their long term prospects.

## 1.2 Review Approach and Structure

### 1.2.1 Basic Approach

In light of the particular needs of the wider DRIVER project and the identified gap there are two main questions which this review seeks to answer:

- What underpinning concepts and actioning principles have been identified concerning effective communication for civil society resilience?
- How far are these currently reflected in practice in Europe?

Our approach to answering these questions involves the following understanding:

#### ***A. Communication is central to Crisis Management and civil Society resilience objectives***

A wide range of research has shown how communications failures are a regular feature of large-scale disasters, especially those with cascading, unexpected impacts [66, 128 & 174]. In addition, communication is an essential element of addressing the core adaptive dimension of civil society resilience [195, 74a, 133].

#### ***B. Research to practice is a key gap***

Given the large body of research which already exists in this field there is a particular challenge to find and address gaps. As such, an iterative approach has been taken which draws on a wide range of sources.

In parallel to a diverse literature and practice review a series of structured interviews, including visits to crisis communications facilities, were undertaken. From this emerges the finding confirming earlier work which stated that that turning research into an accessible and useable form for end-users is a problem [121]. As one practitioner stated during an interview “the best guidance in the world is useless if no one reads or understands it.”

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	12 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

A recent review of the current state of this field has held that “[t]he common criticism that theory does not work in the real world is usually due to overly complex sets of propositions, perhaps characterised by jargon and too many exceptions and caveats” [147].

The gap between theory and practice is a regular comment in both research and from communications practitioners. It is widely accepted that there is a need to improve the accessibility and usability of research. This was a consistent theme in the interviews with practitioners which form part of this review. In fact, this gap is explicitly acknowledged in the Union Civil Protection Mechanism which requires action to “facilitate the sharing of knowledge, best practices and information” [Art 5.1(a)].

As a result, identifying the gap between best practice in theory and practice is an important focus of this review.

### ***C. A diverse field of practice requires a focus on Core Principles***

A core finding in research is the importance of cultural context and diversity in effective communications [74a, 195]. The cultural, administrative and technological diversity between and within European states, as well as the dynamic nature and context of disasters makes it essential to emphasise core principles ahead of specific implementations. It is not desirable, and it is increasingly not possible, to seek to implement a uniformly worded message and to speak through one voice.

#### **1.2.2 Structure of the Review**

The core part of this review is structured in the following way:

1. It defines key terms and gives an overview to the diverse research base underpinning this area.
2. It brings together this work into 5 concepts which underpin effective communication for civil society resilience.
3. 13 principles to guide the implementation of best practice before, during and after crises are detailed.
4. Drawing on the diverse sources outline in Annex 1, an assessment is made on how far the identified best practice is being acknowledged and implemented in Europe.

Finally there is a list of conclusions which will be evolved in further DRIVER work.

The appendixes include details of the work undertaken for this review, the link of this review to DRIVER’s other work (including development of solutions in the communications field and ten brief case studies setting out important communications learning from a range of incidents and policies. In addition appendixes are included which note some major areas of practice development and the current understanding of risk perception and public opinion in Europe concerning natural disasters.

Effort has been taken to avoid duplicating or quoting at length work which is readily accessible elsewhere. Where it was possible to refer to comprehensive reviews of important issues, the relevant references have been included.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	13 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 2 A Diverse field – Defining and Summarising the Research Base

Research and practice relevant to communication for public resilience is highly diverse [19, 79, 109, 122 & 195]. There is not even a consistent approach as to what to call this field. However, the bulk of work falls within the defined areas of risk and crisis communication. An essential point to understand is that while these areas have separate origins they are not entirely distinct – in fact there has been an important convergence between them in recent years.

Over a period of seven decades a substantial base of research and practice has been developed which addresses the underlying dynamics behind what people need to know, what they want to know and how to most effectively communicate with them about these things [86, 93 & 137]. Within this there are distinct phases in the research showing an important evolution in recent years towards a greater engagement with the public. This has led to significant focus on the need to understand the diversity of publics and the importance of cultural issues to how information is received [195, 74a]

### 2.1 Defining the field – Risk, Crisis and Resilience Communications

Communication to assist civil society resilience is not a discrete field of study. It is equally a field where definitions are important and worth understanding.

In its 2015 Global Assessment Report UNISDR reflected on 40 years of intensive work on Disaster Risk Reduction and suggested that now may be a time to consider reframing concepts in order to make them better reflect current understanding and practice [170].

One of the most important developments of modern research has been to point to the need for a continuum in communications through the different stages of disaster mitigation, preparedness, response and recovery. In practice, ‘crisis communication’ is understood to place the emphasis on the response to an imminent or occurring event. Even in the still young study of social media and crises the substantial majority of research is already focused on response [179]. There is also a general tendency to look mainly at channels or means of communication during a crisis [6, 113, 179]. A recent review of the area pointed to a need to move from talking about the technicalities of responding to incidents to talking about the needs of people [156].

The broad field of communication for civil society resilience is most commonly referred to within governments as crisis communication. ‘Risk Communication’ is a distinct but related term. It has been traced to 1984 but as a broad area has its origins at least 70 years ago in the analysis of the impact of flood mitigation work [185]. It is also commonly used – primarily in relation to mitigation and preparedness work [110]. The implementation of the EU Floods Directive represents what is probably the most extensive risk communication project ever undertaken [48].

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	14 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

There are various definitions of the two terms available. Perhaps the most accessible and clear is that of Peter Sandman, one of the most prominent practitioners in the area: “Risk Communication relates to what might happen. Crisis communication relates to “what is happening or has just happened” [142].

A now widely referenced attempt to show the specific characteristics of risk and crisis communications was published by Reynolds and Seeger [137] and adapted here as Table 1.

<b>Risk Communication</b>	<b>Crisis Communication</b>
Messages regarding probabilities of negative effects	Messages regarding the current state or conditions regarding a specific event
Principally persuasive	Principally informative
Frequent/routine	Infrequent/non-routine
Sender/message centred	Receiver/situation centred
Based on known probabilities	Based on what is known and what is not known
Long-term (pre-crisis) message preparation (i.e. campaign)	Short-term – less preparation (i.e. responsive)
Mediated (advertising, publications)	Mediated (press conferences, press releases, speeches, online)
Controlled and structured	Spontaneous and reactive

Table 1: Characteristics of Risk and Crisis Communication (Adapted from Reynolds & Seeger 2005)

An in-depth understanding of risk communication is an essential part of effective crisis communication for man-made and natural disasters. At its core it involves a consultative decision-making process with stakeholder groups to manage risk, using the best available information [110 & 147]. Equally, an understanding of how knowledge acquired through risk communication will influence behaviour in a crisis is central to that discipline. In practice, the most important distinction between the fields is that one emphasises the preparatory phase and the other emphasises the response phase. In addition, there has been a remarkable convergence in the key principles and many of the recommended best practices in the two fields.

The hybrid Crisis and Emergency Risk Communications (CERC) has been proposed as a means of bringing risk messages and crisis communications into the same frame [137, 136]. Proposed originally in the area of public health and actively promoted by the Centres for Disease Control and Prevention (CDC) in the United States, its core rationale is the need to recognise that all crises have developmental features and that it is necessary to understand communications processes during different phases [27]. While it is not clear that CERC is being used as an organising concept in civil protection, it appears to reflect the reality of practice within public organisations. This is particularly the case because most organisations involved in pre-crisis risk communication are also participants in crisis response.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	15 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



CERC is one of many stage models that explicitly focus on communication to create a narrowly drawn framework to predict outcomes and inform crisis communication practices [137]. However, a recent review of the practice and theory of public warning messages has suggested that crisis communication and CERC are underdeveloped in this critical area [9].

A further significant yet not fully evolved, discussion has been the suggestion of Coombs [24] that it is important to distinguish ‘disaster communication’ from ‘crisis communication’. He suggests that disaster communication be seen as a distinct but allied field of crisis communication. The principal suggested difference is that disaster communication is not confined to the local level and involves multiple organisations. Rather than suggesting a separate field of practice this is more concerned with looking at the evolution of risk and crisis communication practices as the scale and complexity of an event increases.

On an operational level it must be understood that the practitioners of risk and crisis communications are rarely people whose work is limited solely to one of the areas. For example, in most countries the authorities charged with promoting flood risk awareness are centrally involved in the response to flooding. The same applies in relation to most if not all areas where public authorities are responsible for communicating about risk or any element of crisis preparedness, response or recovery. ***There is little distinction drawn between risk communication and crisis communication in national strategies*** [31, 43].

A recent systematic literature review has examined the small but rising frequency of the concept of resilience in communications research [74a,]. Communication has been shown to be central to enabling the adaptive capacities needed for resilience [133].

At present the United Kingdom is the only country where ‘resilience communication’ is commonly used. This policy was adopted at a national level to push attention beyond crisis response and involve wider societal dimensions: “Resilience communication is something you do with people not to people”.<sup>1</sup> This is reflected in the creation of Local Resilience Forums which take a lead in regional planning and awareness. The devolved Scottish government has taken this a step further with its training and support service for emergency services “The Scottish Resilience Development Service” and naming the crisis communications centre in the Scottish Government the “Resilience Room”.<sup>2</sup>

This emphasis on resilience efforts has been reviewed and praised by a recent OECD, UN and EC joint report. They found the work as having ensured broad stakeholder involvement and a strong institutional approach to the different elements of promoting resilience [115].

The majority of people involved with communications during crises are highly unlikely to have studied the risk and crisis communications literature in depth. In fact, an overly theoretical approach can cause significant issues. Although there have been improvements in connecting academics and practitioners, it is not yet widespread enough [8]. This is one of reasons why the European Commission has prioritised expanding the “theory to policy” dimension of the community of users in this field [48].

<sup>1</sup> UK National Head of Training & Doctrine, Civil Contingencies Secretariat, interview 13/10/14.

<sup>2</sup> Scottish Government, Head of Resilience Response and Communications, interview 19/08/14.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	16 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



To be useful to practitioners, and to be accessible to an entire organisation, key principles are required which can apply at all stages. As such, training and guidance directly incorporates material from both fields without recognising the distinction.

Irrespective of the approach taken, the linkages between crisis communication and risk communication in both theory and practice have become so strong that separating them in the context of civil society resilience does not appear useful. In fact, separating them may reinforce the difficulty in making best practice research accessible to practitioners. The more academic, abstract and complex that best practice is presented the less accessible and useable it is.

***Where possible we have sought to present risk and crisis communication for civil society resilience as a single field. We have done so because we believe it more correctly reflects best practice both as defined in the research and as practiced in public organisations in Europe.***

Given the widely recognised nature of the narrower focus which using either ‘risk’ or ‘crisis’ alone can lead to, the combined responsibilities in public authorities and the international promotion of the need to encourage a ‘culture of resilience’ consideration should be given to using another, more inclusive, term such a ‘resilience communication’.

## 2.2 Understanding the Research Base

---

In relation to the public sector and potential disasters, research specifically on the effective communication of risk is the most developed and diverse. In contrast, much crisis communication research originated in the context of reputational threats to private sector organisations [181]. As stated above, there has been a remarkable convergence in the last decade, to a point where both fields are emphasising similar approaches as best practice, in particular the idea of substantive ongoing engagement with stakeholders as a basic requirement of effective communication. It is important to understand the progress of research over recent decades as it involves the regular challenging of common practices.

### Risk Communications

Risk communication research has its origins in the study of potential disasters. Reviews have taken a broadly similar approach to describing the main recommendations which emerged during different phases of research over the last seventy years. There has been a radical and ongoing transformation in the theory of effective risk communication. This has involved a move from the highly centralised distribution of limited expert information to an approach which emphasises a dialogue with stakeholders including the public. Sandman and Covello’s 2001 [30] definition of four phases to this research from the mid-1970s represents a good summary (Figure 1: Phases of Research on Risk Communication according to Sandman & Covello (2001)).

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	17 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

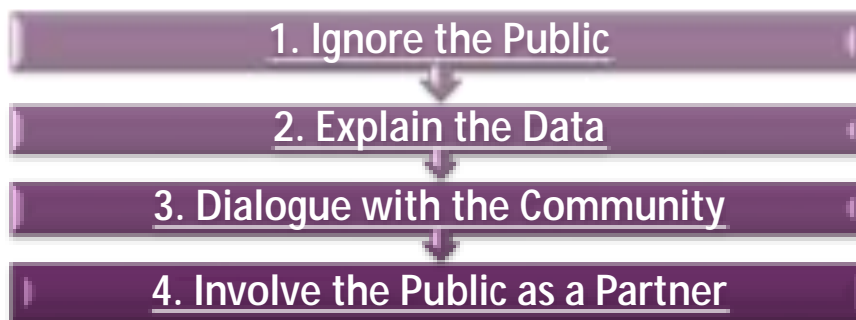


Figure 1: Phases of Research on Risk Communication according to Sandman & Covello (2001)

The core progression has, in this presentation, been from one of expert organisations seeking to implement an almost military ‘command and control’ approach to one which is more inclusive and responsive.

An earlier and more colloquial summary, presented here as Figure 1: Phases of Research on Risk Communication according to Sandman & Covello (2001) , put the phases of research into short statements which suggest that a recurring problem has been the tendency to look for the single approach which represents the ‘key’ to success[54]:

1. “All we have to do is get the numbers right”
2. “All we have to do is tell them the numbers”
3. “All we have to do is explain what we mean by the numbers”
4. “All we have to do is to show them that they’ve accepted similar risks in the past”
5. “All we have to do is show them that it’s a good deal for them”
6. “All we have to do is treat them nice”
7. “All we have to do is make them partners.”

Figure 2: Phases of Communication Practice

A short way of expressing the complexity and challenges of risk communication was encapsulated in the 1980s by Peter Sandman’s formula: **Risk = Hazard + Outrage**. In this ‘outrage’ involves a range of reactions including fear and disbelief. It has been used to make the point to new generations of risk and crisis managers that it is not enough to understand the technical dimensions of a risk when communicating with the public.<sup>3</sup> Recent work has provided some scientific support for the formula [155].

This evolving approach has been described in different sectors as well. For example, the World Health Organisation (WHO) in reviewing communications in public health crises described it as originally highly didactic and based on describing non-anticipated reactions as ‘irrational’. It now

<sup>3</sup> See [www.psandman.com](http://www.psandman.com) for list of articles and discussions on this formula.

advises that public concerns be treated as legitimate, be explored and respected as a force that will influence how the crisis develops [191].

More specifically Europe-focused reviews confirm this evolution and suggest a core movement from the idea that the “public misperception” of risk was the main problem to a position of recommending a 2-way approach which recognises that authorities can also learn from the public [11, 195]. During each of these phases of research there has been a significant effort to convert theory into organisational practice. Particularly as a result of Framework Programme funding in the last decade there has been a steady increase in European-based research in the general field of risk, crisis and emergency communications. There has, in particular, been significant work on flood risk communication, reflecting the fact that this is both the most frequent and the most anticipated type of disaster in Europe [34, 153].

### Crisis Communications

Crisis communications in the field of natural disasters is a relatively more recent field of study. Through much of its history crisis communications has been substantially focused on reputational management by organisations and private organisations in particular however its importance to crisis management has been demonstrated in several fields of study [25, 86, 93 & 137]. As for specific recommended practices, the research tended to propose approaches which have been defined as top-down and sender-centric [25].

Within the distinct field of emergency management studies, communications has become a substantial priority. Much of this has focused on the core technological challenges of communicating during disasters, but has now moved on to a broader range of issues concerning the effectiveness and construction of messages.

### Convergence

A significant convergence between crisis and risk communication research has recently been observed. The identified core principles for both areas emphasise issues such as the importance of trust, honesty, two-way communication and the diversity of the population.

It has been suggested that what we are experiencing is an important move from a ‘push’ model of communication to a ‘pull’ approach which sees communication in a crisis as a two-way process [117]. The most dramatic development in the past decade has been the emergence of social media as a challenge and opportunity for communications during emergencies in general but especially crises which impact on large populations [57, 180]. This development has prompted an understanding of the need to see communications as a complex and fast-changing element of the crisis management cycle.

From a time when crisis communication was seen as a test of an organisation’s ability to quickly formulate and stick to a message it is now said to be “strategic and continuous”[181]. While practice does not always reflect this, this core framing is the current accepted approach throughout Europe.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	19 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 2.3 Defining Phases of Communication

### ***Before, During, After***

An essential starting point is to address the issue of whether and how to segment the practice of communication for civil society resilience. ***There are many different approaches but there is general agreement to the idea that it can be defined in phases and that it is a continuous process.***

It has been shown that distinct phases exist in terms of public reactions and effective practices and also that there are distinct phases in traditional media relations, social media and in the behaviours of all stakeholders [25, 181, 68, 180].

In term of the defining characteristics of a disaster management cycle, an accessible way of showing overlaps is presented here in Figure 3.



Figure 3: Phases of Disaster Management (adapted from Moe and Pathranarakul 2006)

Preparedness, response and recovery are identified in all best practice reviews. Many distinguish specific mitigation and warning phases and some include further divisions based on tasks such as the compiling of reviews. There is no consistent standard and simplicity is an important consideration as a basis for accessible guidance on best practice. The point has been made that irrespective of the number of phases used they ultimately divide into being before, during or after an event. Particularly because responsibility for different phases generally rests within single organisations and communications units, it is an approach which reflects how they approach their work.

## 2.4 The Central Importance of Individual Perception of Risk

How an individual perceives and is likely to respond to risk is central to the framing and impact of communications before, during and after a crisis. The idea now universally present in the literature is that understanding and targeting individual risk perception can help enhance individual resilience.<sup>4</sup>

A meta-analysis of 34 studies of risk perception found a strong link with subsequent behaviour, particularly when communications reflect individual experiences [182]. This is one of the core underpinnings of the growing consensus around the more dynamic conception of resilience where it is seen as developing in interaction with the individual's social context [195]. Measuring and understanding risk perception is, however, much more complex than the measurement of the likelihood and impact of a particular event.

A specific focus has been on how various underlying factors influence individual risk perception and in turns their responsiveness to warnings [96]. This work serves as the foundation for many of the key principles and recommended best practices for promoting civil society resilience. A good comprehensive summary of the findings of this work was prepared by Sorenson in 2000 and has been adapted during recent EU-funded work:

Factor	Influence on responsiveness	Level of empirical support
Physical cues	Increases	High
Social cues	Increases	High
Perceived risk	Increases	Moderate
Knowledge of hazard	Increases	High
Experience with hazard	Mixed	High
Education	Increases	High
Fatalistic beliefs	Decreases	Low
Resource levels	Increases	Moderate
Family size	Increases	Moderate
Kin relations (number)	Increases	High
Community involvement	Increases	High
Ethnic minority group member	Decreases	High
Age	Mixed	High
Socioeconomic status	Increases	High
Being female vs. male	Increases	Moderate
Having children	Increases	Moderate
Personal warning v. Impersonal	Increases	High
Message specificity	Increases	High

<sup>4</sup> This section draws on the fuller review contained within DRIVER's D32.1: Identifying major factors of risk perception

Factor	Influence on responsiveness	Level of empirical support
Number of channels sent out on	Increases	Low
Frequency of transmission	Increases	High
Message consistency	Increases	High
Message certainty	Increases	High
Source credibility	Decreases	High
Fear of looting	Decreases	Moderate
Time to impact	Decreases	Moderate
Source familiarity	Increases	High

Table 2: Summary of Factors Influencing Responsiveness to Warnings (Sorenson as adapted by Demeritt *et al* 2011)[34]

As can be seen in Table 2, there are a significant number of factors which can influence responsiveness to warnings or risk messages in general. Another comprehensive summary table may be found in the US Environmental Protection Agency's (EPA) *Risk Communication in Action* [172].

In most areas where there is a risk of a widespread public impact there have been detailed studies of risk perception and impact on preparedness. In fact, research on risk perception underpins much of the best practice literature on communications for emergencies and disasters. It is also extensively used by governments and public sector organisations in developing their disaster response strategies [e.g. 165, 172]. Experiments to refine the relative significance of different factors in the context of specific hazards, in particular flooding, are now common [20].

A fuller treatment of the issue can be found in DRIVER's D320.1 *Report on Risk Perception*.

## 2.5 The European Dimension

While the majority of early work in this field was carried out in the United States a broad and increasingly deep research base has developed through Europe. Recent reviews have identified gaps including the need to more closely integrate risk and crisis communications research in some countries and a lack of detailed engagement with cross-cultural and cross-border issues [195]. A particular issue with assuming a uniform impact of a message strategy across multiple publics has been identified.

It is important to note that Europe hosts the only large-scale and ongoing efforts to fund research crossing international boundaries. For example, the European Union's 2007 Floods Directive is the largest multi-national risk awareness and mitigation process ever undertaken. Through DG ECHO, which was established in 2010, and the new Emergency Response Coordination Centre (ERCC), the European Commission helps coordinate cross-border cooperation for disaster preparedness, response and recovery.

Principally though not exclusively through the Framework Programmes (now Horizon 2020) the Commission has funded many research projects which have a direct relevance to communications for civil society resilience. DG Home Affairs has also funded relevant research. Through its

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	22 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

Eurobarometer research on public opinion the Commission itself directly provides important information for understanding risk perception and disaster preparedness in all member states.

The combined impact of this work is that there is developing critical mass of work which places international best practice into a European context and is also addressing the threats which are of most concern to European citizens.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	23 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 3 Five Core Concepts which Underpin Communication for Civil Society Resilience

As explained above, the study of risk and crisis communications is a diverse and rapidly evolving field. The difficulty with this for practitioners is that it is often not very accessible. A common request is for the area to be summarised into key principles which can underpin operational practices. In the context of the international, multi-level disaster scenarios which DRIVER is considering it becomes crucial that all parts of the ‘system of systems’ accept basic strategic concepts in framing their communications.

This chapter addresses the concepts which should underpin communication for civil society resilience as distinct from the specific actions to implement these in practice. It first defines them in terms of the research base and then evaluates how far they are accepted in practice.

### 3.1 Underpinning Concepts for Effective Communication

There is no uniform approach to the number and nature of the concepts which underpin effective communications for enhancing civil society resilience. However there is a shared understanding that there are concepts which should inform strategies before they are converted to operational practices.

For example, a summary of work on public health communications suggests the four central ideas of: 1. Risks are different, 2. People are different, 3. Probabilities can be difficult to interpret, 4. Debates are conditioned by social/political context [11]. Hyvarin and Vos’s recent review of work on community resilience and crisis response has found consistent support for the importance of trust, diversity, cultural context and coproduction of meaning [74a]

In moving from a diverse base of theory to an approach which is evidence-based yet accessible and useful to practitioners it is possible to summarise the underpinning concepts in the five ideas of: Trust, Context, Diversity, 2-Way and Relationships (Figure 4). Each of these has a significant role to play in shaping communications strategies and is explained in the following sections.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	24 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final





Figure 4: Underpinning Concepts for Effective Communications

### 3.1.1 Trust

Trust is a fundamental element of cohesive societies and becomes even more important at times of crisis. The concept is referred to more than any other as the foundation of effective risk and crisis communications and is present in all of the relevant literature.

The research has particularly focused on the issue of warning messages and their impact. Trust relates to both the sender and the receiver of a message. The one constant when communicating risk is uncertainty therefore the regard it is given largely depends on other factors [119]. An individual's trust in a message is the result of prior experience with the source of the message, the channel used and its content. "Trustworthiness, expertise and competence are fundamental criteria for source evaluations." [9].

Where an organisation or an individual communicator does not have or loses the trust of the population or sections of the population their ability to have their messages understood and acted upon is dramatically undermined [11, 191]. In fact, even a well-framed and targeted message from an untrustworthy source is likely to be disregarded. In addition, warnings are generally not the norm and so are often received with scepticism [36] and this also contributes to the importance of trust in a time sensitive response situation.

This has radical implications for a field where 'getting the message right at the right time' was initially the sole focus. "Most theories see warning as more than a simple stimulus response process rather... as involving individuals, messages, behaviours, attributes, perceptions and social structures." [147]. It requires strategic engagement before, during and after a crisis as crisis communication is an instrument of cooperation [84]. It is a particular challenge to the impulse to protect an organisation's reputation in the early stages of a response such as applying Benoit's Image Repair typology [13, 14], which mainly focuses on strategies for self-defence. If an organisation is felt to be concerned with itself rather than solely focused on the public it can have immediate and long-term negative impacts. A classic case study of this is the response of the Federal Emergency Management Agency to Hurricane Katrina [60].

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	25 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

### 3.1.2 Context

The individual and social context of the recipient of communications has to be understood and reflected in the communication if its impact is to be maximised.

It has been shown that even small differences in the individual's context or experience can influence how they receive a resilience-related message [94, 95]. This relates particularly to the risk perception research outlined above. The individual perception of their own abilities, past experiences, connection to networks and other factors are involved. "Crisis, for example, creates a specific context, which influences communication activities, and the communication activities also influence the context" [147].

An example of how this is important for multi-national communications has been shown on research in adjacent areas across an international border, which share a common flood risk but have significantly different risk perceptions, expectations of authorities and reactions to communications [33].

This concept has substantial implications in relation to the need to engage with individuals over a longer period in order to understand and address the context in which they will receive communications.

Context is a core principle because without considering it, the communication will be less effective. People will respond to warnings based on their prior experiences, their associated beliefs as well as the social and psychological context of the warnings [139]. "Warnings are communication and decisional systems characterised by the primary variables of uncertainty, timing and width of diffusion" [147]. In this vein, context is also not a static concept but a consideration that evolves with the unfolding crisis.

### 3.1.3 Diversity

Above the level of individuals, research is consistent in showing that effective communication requires an acknowledgement of the inherent diversity of populations.

There may be an imperative at times to 'Speak With One Voice' but you are rarely if ever speaking to one audience. The tendency to view 'the public' as a homogenous group is a common error [87, 195]. It has been shown repeatedly that population demographics are important in framing and implementing communications [173, 96]. In Europe it has been shown that even within cities the diversity of the population is important – and that the diversity of a population requires a diversity of communications [91]. This diversity is not just linguistic or ethnic it is also relates to issues such as class, education levels, age and special needs.

As the OECD has put it, the need is to move from command and control to scalable stakeholder engagement [10]. The implications of this for practice are wide and, as will be outlined later, form one of the biggest unmet operational challenges in Europe.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	26 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

### 3.1.4 2-Way<sup>5</sup>

The traditional approach to communications was for the ‘expert’ centre to define the nature of the crisis and to ‘push’ the agreed message to the population [117, 11].

**In fact there are few circumstances in which communication with the public during a complex crisis can be successful without an on-going 2-way communication with the public.**

In order to be successful communicators have to start by accepting that the ‘meaning’ of a communication and of a crisis will be created jointly by the communicator and the public. This way of thinking goes back to the 1970s when Barnlund’s model of transaction was developed for interpersonal communication. The main basis was that communication is not linear but rather ongoing feedback loops that involve encoding and decoding processes that allow for the co-creation of meaning [147]. Other theories have emerged and focused on crisis communication; “Ultimately, communication is about the construction of meaning, sharing some interpretation or consensual understanding between senders / receivers, audiences, publics, stakeholders or communities.” [147].

It is essential to respect the role of stakeholders in relation to preparedness, response and recovery and seek ways in which they can enhance each [26]. For example, the growing role of individuals aiding situational awareness is becoming a core theme in after-disaster case studies [158, 117, 22]. The empowerment of the public within the emergency management cycle is a growing and important element in work which is specific to Europe [180].

### 3.1.5 Relationships

**Because disasters are inherently characterised by rapid change, uncertainty and complexity the need to build strong working relations within and between organisations is essential.**

This involves more than the ‘blue light’ services and extends to wider stakeholder groups. This again applies before, during and after events. The importance of coordination, joint protocols and regular joint exercises is a constant theme of the literature. In particular, the need for joint training and exercises which include communications has been identified as a core element of building trust within teams [10].

It has been shown that cohesive relations and what can be called ‘networks of trust’ predict good communications and, equally, the interruption of effective cooperation is a common factor in failures during complex emergencies [66].

<sup>5</sup> This concept was originally drafted as “Co-creation of meaning”. In reviewing drafts with end-users, this phrasing was found to be difficult to understand, while ‘2-way’ both addressed the substantive point and was felt to be more accessible.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	27 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 4 13 Actioning Principles which Define Best Practice

The objective of this chapter is to bring together into an accessible framework what has been proposed as best practice in communications for resilience. It seeks, in other words, to define best practice in theory.

### 4.1 Using Crisis Management Phases – Prepare, Respond, Recover

In order for this approach to be accessible to end-users it is necessary to link these actions to the phases of the crisis management in which they are particularly important.

In Section 2.3 above it was shown that while there are many approaches to defining the crisis management cycle ultimately all involve phases which can fit within the framework of being before, during or after an event. In many countries mitigation/prevention is identified as a distinct phase, but the practical boundaries between these and a more generally defined 'preparedness' phase are difficult to define. Similarly, an 'alerting' phase is often identified. Again, the practice boundary between this and a more general 'response' phase which includes initial alerts of a threatened event are rarely significant.

Preparedness, response and recovery are identified in all best practice reviews. This is capable of being applied across states, cultures and organisations. In addition, the research is clear in stating that the process of communication should be continuous.

As such we have adopted the approach of dividing best practice into three phases which occur before, during and after an event. We have defined them by the principal objective of each phase: Prepare, Respond, Recover.

This can also be presented in the form of the classic circular flow (Figure 5). The benefit of this is that it reinforces the point that communication during an event is just one part of an ongoing process. In addition, it stresses that a crucial action during recovery is to rigorously evaluate communications work and to use this knowledge to improve preparations for subsequent events.



Figure 5: Cycle of Communication for Civil Society Resilience

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	28 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 4.2 13 Actioning Principles

Just as there is no uniform description of the phases of disaster management or communication there is no single approach to the number or scope of best practices in communications. As with other areas, it is possible to focus on what is a high level of overlap and the consistent themes which emerge.

The most comprehensive approach in a European context is found in the various outputs of the CrisComScore FP7 research programme which was completed in 2011. The project produced a lengthy and detailed review of the scientific literature underpinning 25 distinct areas of best practice including 60 specific practices. It presents the current (SOTA) in terms of an exhaustive review of the theoretical bases for best practice ([www.criscommunication.fi](http://www.criscommunication.fi)). Other comprehensive reviews exist as do high-level statements of strategic objectives [24, 120, 136, 25, 147, 26].

Here (Figure 6) we group and simplify the best practices and have used 13 actioning principles: three in the first phase ('Prepare'), seven in the second ('Respond') and three in the third ('Recover'). These are present in all recent reviews of best practice and they reflect the underpinning concepts of effective communication for civil society resilience outlined in the last chapter. They can serve as a short checklist for reviewing practice. As an aid to memory, as few words as possible are used to describe each principle.



Figure 6: Actioning Principles of Effective Resilience Communication

In the following section each actioning principle is briefly summarised. There is then a short consideration of research findings and a list of recommended practices.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	29 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

It is possible to highlight specific actions as being particularly relevant to a specific action, for example the role of planning before an event in building relations between and within organisations. However all of the underpinning concepts outlined in Chapter 3 relate in some way to each of the actioning principles.

## 4.3 Prepare

Given the need to build trust, tailor policies to individual and group diversity and be able to communicate during complex and uncertain events, preparations undertaken before an event are absolutely essential. There is no example in the literature of a successful response to a major disaster where the advance preparations were poor. In contrast, an approach to communications which has recognised it as “strategic and continuous” is present in most successful responses. Much of the activity during this phase is internal to organisations which will lead the response, however there are essential public communications activities to be undertaken to improve likely resilience in civil society.

### 4.3.1 Understand

Develop a deep and broad understanding of the population which is being served and the likely impact of communications activities.

Understanding the risks and potential disaster scenarios in an area is an essential and accepted technical activity. Just as important is the need to understand the population to be served – its current and potential needs as well as its likely reaction to response communications. It is a common failing that organisations feel that this is a ‘soft’ area when compared with engineering. Arising from this it is often felt that an intuitive understanding of the population is enough. In response it has been said that we need to work to “upgrade our common sense” [125]. Weather and flood warnings need to be tested with the population to ensure their effectiveness [185]. At a more micro level, the detailed study of a population and its reactions can help to improve building evacuations by understanding which hand-signals are most effective with a given population [15].

When it comes to the core task of phrasing warnings, it has been said of these that probabilities and predictions “can be stated in the language of science but cannot be answered by it” [11]. “A central variable” in all efforts to communicate risk is uncertainty [119]. All warning systems must then balance this uncertainty with inducing action in the population and thus many warning systems have graded systems to communicate likelihood and severity [147]. The use of numerical probabilities can increase the impact of a warning in some cases and in others cause a critical delay [187]. An important summary of a decade of research on mobile alerting in the United States has reinforced the need to pre-prepare and test messages with a finding “the odds of writing a successful-yet-brief mobile warning message from scratch during a rapid-onset emergency appear slim”[9].

As discussed earlier, while there may be a single communications objective, to be effective messages must be tailored to the context of recipients, delivered by trusted sources and involve a 2-way process. For this to be achievable detailed and ongoing work is required. Every additional piece of

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	30 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

understanding of the population makes it more likely that the response will be effective and the human impact reduced.

A comprehensive understanding of the population would include:

- Detailed demographic information and stakeholder identification.
- Perceptions of the likelihood and likely impact of specific risks occurring.
- Public understanding of specific messages and crisis information.
- Attitudes to key organisations and spokespeople.
- Preparedness levels (skills, supplies, plans, understanding)
- Information on media usage patterns and likely communications channels during crises.

This level of understanding requires an ongoing commitment to research including quantitative and qualitative work.

#### 4.3.2 Educate & Engage

Implement a programme of public education on priority preparedness skills/information and establish ongoing interaction with public.

It is a consistent part of the recommended best practice, that public education and active engagement with the public before an event will help improve levels of trust and the effectiveness of communications during a crisis. Raising levels of awareness of risks and appropriate responses has been identified by OECD ministers as their most important recommendation for DRR [114]. In terms of Europe's most frequent and damaging natural disaster, flooding, the need for hydrometrological risks to be communicated to the public in advance through information campaigns is a common research conclusion [34]. In a comparison between the Central European floods of 2002 and 2013, areas where information on risk was more actively provided were shown to have suffered less damage and responded better [94].

On the very specific issue of preparing people to respond to warning messages, including evacuations, the importance of education before the event has emerged as a consistent finding [173, 186, 15]. A dramatic example of this can be seen in the 'Miracle of Kamaishi' in Japan where nearly 3,000 children in two schools survived the tsunami of 2011 specifically because of preparedness education (see GEJE case study in Annex 3: Case Studies).

It has also been shown that the design of warning systems improves with public dialogue and that important mitigation and preparedness activities can require active engagement with the public if they are to be accepted [34, 16, 187].

In relation to stakeholders identified in developing an understanding of the diversity of the population, it is recommended that they be engaged in formulating and validating strategy. For example, active engagement with small business or with people with disabilities, to ensure that the information and response policies relating to them reflects their needs.

Recent work on flood preparedness in Scotland has shown how a programme of active public engagement can increase the 'social capital' in a community and make people more willing to assist in response and recovery efforts [168].

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	31 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



Specific recommended practices include:

- Incorporate risk awareness and disaster preparedness in school curricula.
- Actively provide transparent and understandable public information on risks and response strategies, with more detailed information being readily available to those who seek it.
- Establish stakeholder forums as a means of 2-way consultation on risk awareness and crisis preparedness.
- Ensure that information is provided in forms which are likely to engage different groups (e.g. young adults, people with disabilities) and uses imagery appropriate to the target group.
- Seek opportunities to include stakeholders in exercises.
- Build social media presence.

### 4.3.3 Plan

Clearly define and then practice the public communications elements of response plans within and between agencies.

Planning for response emergencies and disasters is the core business of response agencies. This involves testing each of the technical elements of response and frequently using international standards as the basis for this work. Exercises and evaluations are universally seen as essential. What is less appreciated is that communications must also undergo the same level of planning activity.

As the failure of communications within and between organisations is a part of most poor responses to complex disasters, planning for, developing and testing these relations is vital.

The number of full-time professionals responsible for resilience-related communication is small. During a crisis there is an immediate need to significantly expand the scale and pace of communications. Many of the skills required are not used on a daily basis and the number of people who will find themselves undertaking some element of communication with the public increases significantly.

Cohesive relations and clarity of roles and policies are substantial predictors of good communications during a crisis. Extensive training, including exercises and continuing professional development, can be central to developing trust and maintaining skills for infrequent crises [10, 85]. Including the public within exercises to give realistic feedback on communications can improve the effectiveness of exercises [78].

Specific recommended practices include:

- Have roles, responsibilities and strategies between and within organisations clearly established.
- Have the capacity in place to rapidly expand communications personnel and activities.
- Enact a policy of including spokespeople and communications in exercises, with the evaluation of communications incorporated in after-exercise reports.
- Ensure that spokespeople have at least a basic understanding of core technical actions which are involved in disaster response.
- Establish links to the media and, where possible, incorporate a media element into exercises.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	32 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



- Hold regular exercises on a multi-agency basis.
- Incorporate the basic principles of communication into training for all roles which involve dealing with the public.
- Prepare a 'Frequently Asked Questions' database for use during response.
- For national coordinators, establish formal lead responsibilities for different disasters and links to international crisis coordination centres.

## 4.4 Respond

The response phase is the fastest-moving, most complex and most challenging. It has also been the subject of the majority of practice-focused research and recommendations. As a crisis evolves, the needs change and communication needs to be agile and dynamic to meet this; “public compliance in these circumstances can be an overwhelming communication challenge involving consideration of audience characteristics, available channels and the larger social and crisis context” [147].

### 4.4.1 Fast, Honest & Accurate

Provide information to the public as quickly as possible always ensuring that everything relevant is made available and is updated regularly.

This is an area which is intimately linked to the idea of trust between the communicator and the recipient. However, to be effective the other underpinning concepts must also be considered.

Successfully communicating about any event which may cause public concern requires the public to have faith in the communicator and the information. It also requires that the communication address their context, their stakeholder group, etc. [9].

The public must believe that they are being provided with the full picture of what is happening and may happen – and that they are receiving this information as quickly as possible. If information is perceived as being incomplete or withheld the likelihood of a delayed or damaging reaction is increased. The public will accept uncertainty and that situations evolve – what they won't accept is being kept in the dark [183]. Additionally where warnings diverge from experience they face frequent scepticism which places an additional premium on the need to establish public acceptance of the timeliness, openness and accuracy of information [36].

In operational terms this is an enormous challenge. Situational awareness takes time and is often incomplete. High levels of uncertainty are central to all disasters. The natural instinct of responders is to want to give a complete and technically exact message – however this can lead to substantial delays, confusing messages and a suspicion of information being withheld. The misplaced fear of public panic is also a potential factor in the withholding of information.

There are different approaches to defining exactly what information people need at a given point however the most common summary is “What has happened, what is expected to happen and what should you do”. Understanding that stress reduces the ability to process information, it is

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	33 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

recommended that messages be worded as simply as possible. (See Section 3.3 for fuller treatment of message framing).

Specific recommended practices include:

- Never deliberately mislead the public.
- Have a ‘first hours’ strategy which includes agreed procedures for public information.
- Establish a procedure for regular updates.
- Be aware of the principal information needs of people.
- Use standard message formats.
- Ensure that the principal spokespeople or communications leaders have full access to current information and the rationale for decisions.
- Acknowledge uncertainty.

#### 4.4.2 All Available Channels

To reach the whole population as many communications channels as possible must be utilised and potential interruptions in dominant channels must be anticipated.

The original approach to channels of communications relied heavily on mass broadcast media. This has changed quite radically in recent years to a recommendation that all possible channels of communication be utilised. This fundamentally recognises the fact that in normal communications success is defined by percentages of the population reached but in disasters the objective is to reach all of the population and to reinforce the message to increase its impact. Messages which are as targeted as possible on individuals and groups and which are confirmed through additional sources are significantly more likely to be impactful [96, 177, 80, 9].

Social media is now a principal area of study and practice development. It is accepted that alerts and updates which can be accessed readily by individuals should be a part of core communication work. Individuals are willing to receive warnings to their phone and to subscribe to personalised alerts [57, 166]. However the development of online and portable media does not replace traditional communications through the media [100, 156].

There is a further need to anticipate that current dominant channels may become unavailable during a disaster. A number of the case studies contained in Annex I show how an all-channels approach can help address the loss of broadcast media.

Specific recommended practices include:

- Include the ability to communicate through diverse media in plans and communications staff.
- Do not allow a single channel to dominate to the exclusion of others.
- Offer the public the opportunity to get information personalised to their situation through initiatives such as mobile applications and subscriber warning services.
- Develop networks for the distribution of information within stakeholder groups.
- Be prepared for communication during localised and widespread ICT and power failures.
- Where possible and necessary undertake public education campaigns (e.g. for threatened pandemic).

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	34 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

### 4.4.3 Empathy not Reputation

You must show an understanding of people's situation and fears in all communications, leaving reputational issues until after the response is concluded.

The core reflex to defend an organisation is a common and understandable one – it is also a direct threat to effective communication during a crisis. A classic case of a perceived concern for reputation damaging communications is found in the early reaction by the Federal Emergency Management Agency (FEMA) to Hurricane Katrina [60].

It is indeed likely that there will be a 'blame game' where a response is viewed as inadequate or where an impact may have been avoidable. However, the time to address this is during the recovery period.

At all costs it is important to express understanding of people's fears and empathy for their situation [11]. Showing that your primary concern is protecting the public rather than protecting the organisation helps create essential trust and avoids wasting valuable time.

Specific recommended practices include:

- Put the immediate threats and public concerns first in all communications.
- Show understanding of the fears and hardships being experienced by the public.
- Protect victims from intrusive media activity.
- Respond to concerns whether or not you consider them credible.
- Refuse to get drawn into a 'blame game' but state that the issues of responsibility will be fully addressed once the situation at hand is responded to and recovery underway.

### 4.4.4 Monitor and Engage

No major emergency is static so you must be aware and respond appropriately to evolving public experiences of and reactions to developments.

As mentioned before, disasters are complex events which develop in unanticipated ways. Alerting and informing is a process not a single act. In order to make communications as responsive and effective as possible active monitoring of media and engagement with the public is essential. This is also an area with a wider operational role as it feeds directly into situational awareness and, therefore, the management of the response.

Having robust procedures for monitoring both the media and wider public reactions plays an essential role in helping to separate the signal from the noise inevitable during a crisis. It can help with the early identification of emerging crises and also be a barometer of the successful implementation of response actions [25, 26].

False rumours and urban legends have been a feature of societies faced with crises as long as recorded history. While modern technology can increase the pace and reach of these it also provides a new level of transparency and an opportunity to offer a robust and fast response. The active and successful combating of false rumours during Hurricane Sandy showed the effective implementation of this [158].

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	35 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

In the response to the Haiti Earthquake of 2010 and the Great East Japan Earthquake and Tsunami of 2011 the role of crowdsourced information became clearly established in helping individuals, information distribution and situational awareness. Google Alerts, Google Person Finder, bulletin boards, crisis maps and Ushadidi made significant contributions and it is now accepted that this type of approach will play an increasing role in the response to major disasters.<sup>6</sup>

Specific recommended practices include:

- Establish the responsibility and capability for media monitoring, including social media.
- Seek and enable feedback on the effectiveness of communications.
- Have a means available for individuals to contact the response organisation directly (call centres and online).
- Have standards and capabilities in place to enable and use crowd-sourced applications.
- Ask people to pass on information.
- Be prepared for two way communication and the possibility that the public will use social media to provide each other with useful information but also to publicly criticise the official response or to spread inaccurate or untrue information.
- Dedicated personnel are essential for monitoring public comments and engaging during the most pressurised periods of the response.

#### 4.4.5 Extra Information

Sources of additional information must be available once a response is underway.

The most common reaction to a crisis event is to seek confirming information. It has been said that “we can place trust beyond face to face relationships when we can check the information and undertakings others offer” [112]. People can be reassured simply by the fact that they know that information is available should they seek it.

While the priority must always be on getting essential public safety information distributed, there is a public expectation that more detailed information will be available. Failing to provide greater specifics can cause responding organisations to quickly lose public trust [134].

Specific recommended practices include:

- Having either a dedicated crisis website ready or ensuring that other sites have the capacity to make crisis information readily accessible.
- Publish and regularly update responses to frequently asked questions.
- During public briefings and in key messages point to where additional information may be obtained.
- Where necessary and possible distribute written material in priority areas.

<sup>6</sup> [www.ushadidi.com/2010/01/13/haiti-earthquake/](http://www.ushadidi.com/2010/01/13/haiti-earthquake/); [www.google.com/crisisresponse/japanquake2011.html](http://www.google.com/crisisresponse/japanquake2011.html); [www.google.org/personfinder/global/home.html](http://www.google.org/personfinder/global/home.html); [www.google.org/crisisresponse/publicalerts/](http://www.google.org/crisisresponse/publicalerts/)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	36 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

#### 4.4.6 Expand Capacity

Communications is a core part of the response and will need extra capacity to deal with a significantly increased demand.

Communications departments will rarely if ever be able to cope with the requirements of responding to a major crisis within core staff. The intensity and scale of the communication effort requires the ability to expand those involved. It is also important to understand that people will be communicating with the public while carrying out other tasks and may be asked for comment by media.

For crises with an international dimension, or involving populations with a significant number of non-native language speakers or a general linguistic diversity, catering for a range of languages is essential (see GEJE case study Annex I).

Specific recommended practices include:

- Provide a basic guideline to communications principles in training for all responders.
- Identify persons who can be quickly seconded to assist the communications work.
- Be in a position to service international media inquiries.

#### 4.4.7 Cooperate and Share

Responding agencies must cooperate in framing and distributing communications

The response effort will always involve multiple agencies and diverse units within agencies. As stated before, the failure of communications within and between organisations is a part of most poor responses to complex disasters. Therefore planning for, developing and testing these relations is vital. An effective communications response requires active cooperation, a unified approach to sharing and common core messaging [181].

Discussing and sharing messages between agencies is vital to ensure that communications reflect the most up to date information and take account of the situations being addressed by all responders.

A 'lead agency' approach is common for most crises but there has been a rapid move towards delivering greater clarity and consistency through establishing crisis communications centres (CCCs). CCCs allow for dispersed expertise and information to be brought together and are essential in national-level and multi-national crises [92].

It is also important to understand that responders may be part of the affected population and they have an active interest in receiving all communications.

The management of information flows between organisations during disasters is the subject of substantial research attention and is, of course, central to effective communication with the public [130]. This area is being addressed within DRIVER's work on professional response.

Specific recommended practices include:

- Have roles, responsibilities and strategies between and within organisations clearly established.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	37 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- Have a designated crisis communications centre to be the principal place for media contact and information distribution.
- Ensure that information is available to all organisations and within organisations.
- Systematically document activity in order to allow information to be traced and for later evaluation.

## 4.5 Recover

Communications during the recovery phase is the least developed area in terms of both research and practice. There is no consistent definition of when this phase starts and responsibilities are less clear. However, it has been shown that communication when threats have receded and a crisis situation has stabilised can be crucial to helping people recover, protect trust and strengthen ongoing resilience strategies. An additional and less appreciated point is the need to anticipate that new crises may emerge quickly. It has been shown that multiple events can lead to significant extra stress in an organisation and there is a need to quickly internalise lessons [42].

The 'sense making' element of communications continues during the recovery and issues of accountability and reviewing policies are central. In addition, communication can directly mobilise support for a faster recovery. For example, after the Queensland Floods of 2011, 20,000 people were mobilised as part of what was called the 'Mud Army' to aid cleanup [117].<sup>7</sup> A successful European example of this is the Team Österreich initiative managed by the Austrian Red Cross. This enabled the mobilisation of thousands of volunteers during and after the 2013 floods to aid with priority tasks.<sup>8</sup>

### 4.5.1 Keep Providing Information

As the recovery proceeds continue to provide regular information updates.

The first and most important priority is to understand the need to keep providing regular information after an event. This requires less urgency but the public continues to require information to help understand what has happened and to cope with its impacts. Information provided in this phase is important as this is the phase during which questions are asked about accountability and efficiency of the response. Different phases of media reporting in a crisis have been identified involving an initial focus on establishing what has happened, followed by more in-depth information, human-interest dimensions and the issue of blame [100, 181].

Specific recommended practices include:

- Maintain regular briefings and dedicated information channels (e.g. website)
- Maintain empathy and openness in communications.
- Continue to update 'frequently asked questions'.

<sup>7</sup> <https://youtu.be/sGQqUvkebZ4>

<sup>8</sup> <http://oe3.orf.at/teamoesterreich/stories/2591639>

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	38 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 4.5.2 Keep Monitoring & Engaging

The public continues to have important information and a role to play during recovery.

It has been shown that the level of engagement with the public can have a significant impact on satisfaction with recovery efforts (Kweit & Kweit 2004). Ongoing engagement during the recovery phase, including directing volunteers to useful tasks, can build a public sense of ‘ownership’ of the recovery and create residual social capital focused on community preparedness. Any reversion to a paternalistic or organisation-focused approach carries significant risk for organisational reputations and satisfaction with the recovery effort.

Specific recommended practices include:

- Maintain active monitoring of traditional and new media.
- Maintain channels through which direct 2-way communications with citizens can happen.
- Brief stakeholder groups on sector-specific recovery issues.
- Provide information for potential volunteers to assist recovery efforts where this would be of benefit.

## 4.5.3 Evaluate

A comprehensive evaluation of the effectiveness of communications efforts in having prepared the population, assisted the response and supported recovery is essential.

While ongoing evaluation of communications is a necessary part of good organisational practice, it has a particular relevance immediately after a significant event which has tested practices in the most challenging ways possible. Each event increases the practical knowledge about what works in communications. In addition there is a need for the public and its representatives to understand what happened and what is required to prevent or reduce the impact of similar events in the future. In order to capture lessons and improve future practices it is necessary to take an early and active approach to evaluation [181].

This area is viewed as sufficiently important that some major organisations such as the United States CDCs designate ‘evaluation’ as a distinct phase in crisis and emergency risk communications [172].

Work in DRIVER’s SP5 on strengthened response has identified as a priority the need to improve the collection and addressing of Lessons learnt after crises [40].

Specific recommended practices include:

- Ensure that a rigorous ex-ante evaluation of communications is included in post-event reviews.
- Collect and publish Lessons learnt and implications for revised practices.
- Maintain and share a Lessons learnt database.
- Identify changes which can be implemented quickly in case of new crisis.
- Allow public input to evaluation procedures and publish the outcome without undue delay.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	39 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



## 5 How far is recommended best practice implemented?

In the previous two chapters the substantial body of research-recommended best practice was organised into thematic summaries of underpinning concepts and actioning principles. The purpose of this chapter is to explore how far these are reflected in actual practice before, during and after disasters. The method employed is to provide a broad commentary based on the strategies and materials reviewed as well as the interviews conducted in 2014/15 (see Annex 1: Methodology & Sources for Review). Illustrative examples of current practice are provided, including examples from outside of Europe where these are relevant.

### 5.1 Acceptance of 5 Underpinning Concepts in overall strategies

#### 5.1.1 Overall Assessment

On the basis of strategies and practices considered for this review ***it is clear that in the broad area of civil society resilience there is underway a period of major evolution in communication practice in both Europe and internationally. There is a progressive attempt by organisations to identify and apply key principles of best practice.*** In addition there is an acknowledgement of the need to accept the role of uncertainties.

Over the last decade there has been a growing commitment to publishing core principles to underpin DRR communications. These are broadly consistent with the best practice principles outlined in Section 3. Much of the variation is accounted for by the format of the principal publication used for distributing the principles. Where this is an in-depth guide the list tends to be longer [for national strategies see examples at 31, 43, 100, 102, 145, 165: for reviews of national practices see 10, 47, 115, 116]

Each of the five concepts is widely acknowledged. Two, Trust and Relationships, are found in nearly all strategy statements in some form. For example, key institutions acknowledge the role of building public confidence in their professionalism and reliability, and including communication within shared exercises and strategies is seen as central to strong civil protection capacities.

The other three concepts, Context, Diversity and 2-Way are frequently acknowledged but it is not clear that they have had a substantive impact on strategies. For example, it is widely understood that there are different stakeholder groups within a population but examples of this being seen as a strategic priority are limited. The acceptance of the idea of communication being a two way process is central to rapidly evolving practice concerning social media it is not widely evident outside that sphere.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	40 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



A summary of the acceptance of the 5 concepts at a strategic level in European states is presented here in Table 3.

<b>Concept</b>	<b>Key element</b>	<b>Level of acceptance at strategic level in crisis management structures</b>
Trust	Trust in information sources	General acceptance and acknowledgement in strategies
Context	The cultural context incl. history of recipient	Acknowledged in risk information strategies but not in general crisis communications strategies
Diversity	There are multiple audiences	Concept of stakeholders widely acknowledged but little developed beyond small number of large groups.
2-Way	Understanding of event and response to it is formed <u>with</u> public.	This is widely acknowledged but little developed outside of area of social media.
Relationships	Strong relationships within and between organisations.	Acknowledged at every level as a core challenges



-  High level of acceptance of concept
-  Unclear level of acceptance of concept

Table 3: Acceptance of 5 underpinning concepts in practice

### 5.1.2 Important developments at overall level

Through reviewing the acceptance of concepts on communication with civil society at a strategic level in Europe it is possible to make a number of additional general points above the level of the actioning principles and which provide a perspective on the evolution of strategic and tactical practice.

**The need to improve strategic communication work is widely recognized.**

An important starting point is to recognise that communications practices are frequently seen to be inadequate. Communications during the response phase have been subject to the most attention but problems are shown at all stages. This is not a field defined by entrenched attitudes, resistant to innovation or reluctance to acknowledge of deficiencies. This is the case both in Europe and internationally.

For comparison, Japan is a society which has invested heavily in disaster mitigation and preparedness over a lengthy period – yet 74% of Japanese citizens were reported to have been dissatisfied with information provided during the response and recovery phases of the Great East Japan Earthquake in 2011 [187]. In the United Kingdom, a country with developed communications strategies in public organisations, the principal review of the 2007 floods found that many people were unsure who to turn to for help or information [127]. FEMA had sufficient knowledge of crisis and risk

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	41 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

communication to avoid many of the problems evident during the response to Hurricane Katrina [60]. The case studies in Appendix I show, for Europe and internationally, an active engagement with identifying and addressing strategic failures in communications.

These could be described as avoidable errors where best practice was understood but not implemented. However, there are also many errors which emerge because disasters are inherently characterised by constant change, uncertainty and complexity. These international learnings are widely acknowledged in Europe.

### A move away from paternalistic communications is evident

For this review, publicly available communications strategies for a range of countries were examined and interviews conducted with responders. While there is recognition of the need to improve practice, **no case was identified of an official commitment to the traditional ‘push’ or paternalistic model of communications**. There are examples where this is still the predominant model of practice, but its shortcomings are acknowledged.

### Capacities to implement best practice vary significantly between countries.

Smaller states can have particular difficulty ensuring the availability of developed communications skills and materials, including tested messages. Given limited resources, they are more likely to focus on the technical side of communication rather than content. However they still have an understanding of the core principles of effective communication strategies. For example, the Estonian strategy statement states clearly that the public has a “right to oversee” the state response and that responders should develop practice accordingly [62]. The Czech Integrated Rescue Strategy identifies the development of greater understanding of the population as a priority action throughout the strategy [31].

For larger countries and multi-national organisations there is a consistent intention to try to promote an evidence-based approach to communications and recognise the important of communications within DRR policies.

## 5.2 Acceptance of 13 Actioning Principles in Strategies and Practice

In order to fully understand how far recommended best practices are implemented in strategies and practice in Europe it would be necessary to undertake a uniform survey of states at both national and regional levels. However, it is possible using the materials and interviews detailed in Appendix I to draw broad conclusions about the current state of practice for each phase of the cycle and for each of the 13 principles.

### 5.2.1 Overall Assessment

Overall, it is important to understand that this is a moment of substantial development in the understanding of the role of communications within the full crisis management cycle.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	42 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

The recognition by states and organisations of the need to use research-verified insights to improve communications has meant that there is underway a period of dynamic development in communications practice.

The potential of mobile applications and social media to assist resilience is being explored and considerable work is underway in the visualising of ongoing and imminent risk. Meteorological organisations are playing a core role in this area.

Particularly as a result of actions on flood risk management and debates concerning the mitigation of climate change, there is a definite move towards seeing the inter-linked nature of different issues. For example, a review of disaster prevention policies in member states of the European Union stressed the direct links between civil protection and environmental management policies [47]. European citizens themselves accept that climate change is a serious problem [154].

A less commented upon development is the internationalisation of major disasters in terms of media coverage, public interest and, increasingly, coordinated communication response. Even where a disaster impacts primarily on one country, there are many international dimensions. For example, weather forecasts, aid with civil protection tasks and information for relatives of the affected population have direct international relevance. 53 million residents of the European Union are not nationals of their country of residence [48]. As a result, it can be expected that there will be a substantial number of people outside affected countries with a personal interest in being informed about developments during and after a disaster. Evidence also suggests that there is substantial public interest in disasters even amongst entirely unaffected populations [126]. An important element of this is the need to have a consistency in the speed and content of messages in the affected areas and internationally. The WMO incorporates this principle in all of its weather warnings.

The need for the coordination of communications was developed initially in relation to threatened pandemics but is being addressed in other areas. Within Europe there is an expectation and acceptance of the fact that the institutions of the European Union will take a leading role in facilitating a coordinated crisis response including aiding ‘sensemaking’ [123, 190].

There is at present an openness within national and international bodies responsible for communication for civil society resilience to learn from others and adopt a policy of ongoing improvement. However, there are substantial gaps where accepted best practice is not being implemented or where organisations have difficulty in operationalising best practice.

Table 4 summarises the current level of acceptance within Europe of each of the identified 13 actioning principles:

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	43 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

<b>Prepare</b>	Overall, outside of mitigation efforts, communication with public in this phase is poorly developed and resourced
Understand	Study of population diversity in context of communications is low and an acknowledged gap.
Educate & Engage	Basic public education is well established but few countries have ambitious public education campaigns outside of specific mitigation programmes
Plan	Communication is incorporated in all response planning and increasingly in exercises. Very limited work on advance preparation of tailored and targeted messages.
<b>Respond</b>	Communication in this phase is an area of active innovation and attention. Need to evolve practice widely accepted.
Fast, honest, accurate	The need to be fast, honest and accurate in communications with the public during a natural disaster or other civil protection crises. Practice gaps are acknowledged.
All available channels	Practice has evolved to a 'more channels' approach, understanding limits of sirens and broadcast media. Limited analysis of effective channels for different stakeholders.
Empathy not reputation	There is a broadly-shared understanding of the need to give priority at all times to public safety in communications.
Monitor & engage	Enhanced situational awareness using communications with the public is now a widely established objective.
Extra Information	The amount of information beyond core warning messages has increased substantially and is likely to continue to increase.
Capacity	The difficulty in staffing communications roles in widespread crises is widely shared. Few countries have identified and trained reserve capacity.
Cooperate & share	Encouraging active cooperation between organisations in communications during crises is acknowledged in all countries – with coordination mechanisms also in place.
<b>Recover</b>	Communication in this phase is the least studied and least practiced part of the cycle. No consistent approach or engagement is evident.
Keep providing information	Agencies concentrate on departure of immediate threat but lack strategies for ongoing communication on medium and long-term recovery efforts
Keep monitoring & engaging	General practice is to revert to ongoing, pre-crisis, monitoring and engaging practices.
Evaluate	After-event evaluations of crisis response effort are increasingly common but communications dimension often not included in technical review.

- High level of acceptance of principle
- Unclear level of acceptance of principle

Table 4: Acceptance of 13 Actioning Principles

Seven of the principles appear to have a high level of acceptance at least in terms of planned practice. The most active focus for practice review and development is the response phase. In contrast, there is unclear or little evidence for the acceptance of six of the actioning principles, with the recovery phase being the least developed practice area.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience				Page:	44 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status: Final

Before addressing each of the 13 principles in turn there are two cross-cutting points to be made concerning the lack of systematic evaluation being the key practice gap and the absence of mass communication in practice strategies outside of the response phase.

#### 5.2.1.1 The Key Gap: Evaluation

A consistent feature across organisations and countries is a failure to implement rigorous evaluation of communications activity.

There are many published case studies of what has and has not worked in relation to response activity, and many examples of interesting initiatives for preparedness - however there is a general failure to rigorously evaluate the ongoing impact of communications.

The United Kingdom and Finland have resilience policies which have been assessed as meeting very high standards, however international reviews have pointed to the failure to evaluate the impact of policies. In the case of the UK, while public information activity is impressive there is no data available on whether it is effective [115]. For Finland an identified need is to strengthen awareness and evaluation through regular surveys [116].

*In UNISDR's reporting framework for implementation of the Hyogo Framework for Action no European country quantified public expenditure on DRR communications activities or provided a quantitative measure for the impact of policies.* The European Commission has recently acknowledged that the low level of such monitoring is a problem which needs to be addressed [46]. An earlier review of member states' prevention policies pointed to the need for greater cross-border comparability in order to assess the true state and impact of policies including communications [47].

There is a substantial body of work evaluating the impact of research projects and smaller amount of once-off work, however there is no evidence of the systematic evaluation of communications work.

The lack of a capacity to implement a systematic approach to evaluation is cited as a factor in many organisations, especially in smaller countries. They struggle to have sufficient staff to carry out communications tasks let alone evaluation surveys. However this is also found in large organisations in major countries. As will be outlined below, there are examples of surveys assessing key factors for planning effective communications, however they are not common.

The need to address this major gap is reflected in ongoing discussions to develop and monitor more exact measurements of resilience in Europe and internationally. The World Economic Forum has gone as far as to call for a national resilience rating to be developed to enable benchmarking [188].

#### 5.2.1.2 The Absence of Mass Communication Outside of Response

**Mass communications activity is overwhelmingly concentrated in the response phase. This reduces the likelihood of achieving important communications objectives.**

It is common for countries to set objectives of raising citizens' perception of risk and preparedness to undertake specific actions in the case of a disaster. This is effectively a major public communications objective yet there is little evidence of substantial investment in pre-crisis communications. While public education through broadcast and newspaper advertising is common in the fields of public health and road safety there are limited examples of such campaigns in relation to disaster

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	45 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

preparedness. In reviewing current practices many examples of leafleting and direct contact were noted, but only few broad or ongoing campaigns utilising broadcast media.<sup>9</sup>

## 5.3 Preparedness

Other than in relation to major mitigation efforts, communication with the public during the preparedness phase is poorly developed and resourced.

Within the European Union and internationally communication for disaster prevention and preparedness is recognised as needing greater attention [47, 114]. The European Commission has gone as far as to call for “systematic actions to raise public awareness of risk and improve risk and crisis communication” [46]. While crisis management practices in the pre-crisis phase are viewed as well-developed there are major gaps in communications practices. In general there is a low investment in public education or awareness and the detailed study of stakeholders and their needs is not common. Even in systems viewed as well-developed and active it is felt that ‘the culture of prevention and risk awareness’ is seen as low.

### 5.3.1 Understand – stakeholder & general research

Study of population diversity in the context of communications and investment in communication-related research is low.

As mentioned above, the lack of a broad evaluation and research base to frame and assist crisis communications is a general feature in Europe. The need to develop expertise in stakeholder research is widely acknowledged. Stakeholder mapping is understood as a reasonable objective but is limited in its development. At present it is not seen as a core competence within responder organisations [121]. Most if not all organisations have identified priorities for vulnerable groups to be reached during a disaster response, but few have developed specific communication strategies for these groups.

Where organisations have shown a commitment to researching communications it does lead to important changes in practice. For example, the UK Environment Agency used qualitative research to test flood warning for targeted populations. There are examples, such as the UK’s Local Resilience Fora, of direct stakeholder engagement which has as a core objective of developing greater understanding.

Study of the reach of channels of communication in various scenarios is not common, with communications technology being the principal focus. However there is a general understanding of the importance of development at least general contact with the media on an ongoing basis.

An important European-level development has been the establishment of the Disaster Risk Management Knowledge Centre (<http://drmkc.jrc.ec.europa.eu/>). Managed by the Joint Research Centre, the DRMKC intends to assist the operation of the Civil Protection Mechanism and create a

<sup>9</sup> For a rare exception see Belgian television ad promoting awareness of sirens relating to industrial accidents: <https://youtu.be/CwYDBUSaUsk>

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	46 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

network of information sharing within and between member states. This has the potential to make best practice far more accessible throughout the Union.

### 5.3.2 Educate & Engage

Some basic public education for disaster preparedness is present in all countries while more ambitious public education campaigns are not common outside of specific mitigation programmes.

All countries have some form of public education programme relating to potential disasters, though very mixed in terms of scale and objectives. The majority have identified civic education as a part of core prevention policies [5, 39]. Overall levels of activity are relatively low with the exception of two EU-mandated awareness initiatives, especially when compared with major advertising and public education activities in other areas.

In terms of raising risk awareness, the implementation of the 2007 Floods Directive is currently in process. It is of particular significance because it addresses the most common natural disaster in Europe and the threat of most concern to citizens. It has been transposed into the domestic law of all member states and the process of public engagement on flood mapping is underway. As a result, updated and publicly-accessible flood maps will be available (physically and, in most cases, online) throughout the EU. Member states are obliged to inform populations of their local mapping exercise and involve them in a formal consultation process on flood risk management plans. This is an unprecedented risk awareness initiative which is the largest multinational risk awareness initiative ever undertaken [48].

The EU's Seveso Directives (1982-2012) relate to prevention, preparedness and response to industrial accidents. Named after an Italian town which experienced a major industrial accident in 1976, the current directives [49] set out protocols, including public rights to information, which concern over 10,000 sites. As was seen during the Czech Republic's 2002 floods (pre-accession and therefore outside the Seveso processes) a leakage or other accident at a chemical plant can cause greater concern than the original disaster and lead to unanticipated threats such as a pandemic. National approaches to the public information elements of Seveso differ, but there is a general acceptance that public education in the vicinity of covered sites is required [49].

The use of websites to provide general risk and preparedness information is increasing substantially. All countries appear to provide at least basic printed material on preparedness. How often and how widely these are distributed is not clear.

Where a mitigation measure is being proposed which may prove controversial there remain difficulties in communicating effectively [140, 163]. A recent study of newspaper coverage of flood protection measures showed little interest in flood defences but a lot in 'retreat from the coast' and 'room for the river' [33]. This arises from the 'human interest' dimension of displacing people in the absence of an actual rather than distantly-anticipated crisis.

In relation to young people, only the minority of countries include resilience education as a formal part of school curricula (see case study 'The Miracle of Kamaishi' in Appendix I on the issue of school-based resilience training). A more common approach is localised or web-based materials which are 'child-friendly'. A good example of this is the 'Max und Flocke' campaign of the German Federal

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	47 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



Disaster Management body the BBK.<sup>10</sup> Many countries undertake programmes of school visits by emergency services and agencies such as the Red Cross. While these primarily relate to the ongoing work of the emergency services and skills such as first aid they also touch on large-scale disasters.

An example of a highly-developed engagement with the public is Austria's system of 1900 safety information centres run by the Austrian Civil Protection Association [61]. In the 2015 Eurobarometer survey on civil protection Austria showed the highest level of public faith in official preparedness [154].

Roughly half of member states have some widespread system of sirens for public alerting. Testing of these sirens is undertaken but in different ways. For example, in Austria on the first Saturday of each October there is a test of sirens which is accompanied by public information activity. In the City of Prague sirens are tested every month on a set day and time.

Perhaps the most ambitious initiative in relation to preparedness is FEMA's National Preparedness Month in the USA which involves a wide range of actions targeting not just awareness but also specific preparedness tasks. The United States' CDC also engages in many such actions – with an initiative on **Zombie Preparedness** being a campaign to engage young adults on the principle “if you're prepared for zombies you're prepared for anything”.<sup>11</sup>

Stakeholder engagement programmes targeted at specific groups are, in general, not well developed.

### 5.3.3 Plan

Provision for communicating with the public is present in all response plans. Increasingly it is also being incorporated into exercises and the international dimension is being addressed in countries with experience of multi-national disasters.

The need to plan communications as part of preparedness for response is universally acknowledged in Europe. Practice is more developed in this area than for the other key factors for effective communications before an event.

Basic communication training and guidance is generally available and the need for it is accepted. There remain however critical problems.

Training of responders in most countries can tend to emphasise media training rather than an in-depth approach to the principles and evidence-based practices of effective communications. As the majority of people who will communicate during an event are not specialists the availability of trained staff for communications is dependent on other considerations. A high turnover, loss of corporate knowledge and pressures of other responsibilities are commonly cited issues especially outside of national organisations in larger countries.

Some countries such as the UK, the Netherlands and Sweden publish communications guidance aimed at non-specialists. Many others do not and the difficulty of translating research-generated practice into accessible material is a common issue. 'Action Cards' which set out core actions and guidance and which can be readily referred to during an intense response are a desired practical aid.

<sup>10</sup> [http://www.max-und-flocke-helferland.de/SubSites/KI/DE/Home/home\\_node.html](http://www.max-und-flocke-helferland.de/SubSites/KI/DE/Home/home_node.html)

<sup>11</sup> [www.cdc.gov/phpr/zombies.htm](http://www.cdc.gov/phpr/zombies.htm)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	48 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



An important issue concerning training is that national or regional political leaders and top-management of response organisations are frequently the least likely persons to have participated in training and exercises. Given their central role as spokespeople and decision-makers on messages during crises this can be a concern. The capacities of decision makers has been identified as a training issue in DRR policies in developing countries but it is not a mainstream concern in the EU[32].

It is increasingly common for countries to reference relevant exercises held just before an event as aiding the subsequent response [35]. It is not common for detailed message scenarios to be practiced, however there is an understanding of the need to involve communications personnel within what is a developed approach to inter-agency exercises (for an exception to this UK Dept. of Health 2012). In particular there is a belief that building links between experts and generalist spokespeople is important. The need to develop realistic exercises including communications is understood [121]. This appears to be being addressed. For example, in the Czech Republic spokespeople work directly with technical staff during exercises and in the UK and Ireland broadcasters have on occasion participated in exercises.

Involving the public in exercises in order to evaluate communication activities has been shown in Sweden to provide important feedback and to ensure that the exercise is more realistic in its treatment of communications [78].

Technical forecasting and monitoring agencies have, in general, begun to understand the need for them to provide information which removes avoidable uncertainty and is readily understandable to non-experts. The UK's Natural Hazards Partnership is an example of a formal structure which brings together 12 technical agencies and 5 government departments to agree joint analyses of data. It publishes daily hazard forecasts based on 1, 5 and 30 day horizons. In addition, it publishes non-technical guidance on the underlying science behind key types of disasters [168]. The Polish government publishes a daily threat analysis drawing on reports from all government agencies and the Polish Geohazards Information Centre has developed its communications work to fit the needs of the public and non-technical leaders.<sup>12</sup>

Formal multi-national cooperation is also a growing feature in Europe. Countries with regular cross-border disasters have developed formal cooperation protocols. While these include the issue of sharing information joint communications have not been developed.

The European Commission's Exchange of Experts programme has begun to increase the level of in-depth cooperation between countries, with the examination of communications policies included in recent programmes.

---

<sup>12</sup> [http://rcb.gov.pl/eng/RAPORT\\_DOBOWY/RD\\_RCB.pdf](http://rcb.gov.pl/eng/RAPORT_DOBOWY/RD_RCB.pdf)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	49 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 5.4 Response

Communication during the response phase is the most studied and the most developed part of crisis communication activities. It is an area of active innovation and attention. All organisations involved in response express an understanding of the need for them to evolve practice.

It is difficult to get a clear picture of practice across Europe in the absence of systematic reporting on activities. This said, it is possible to identify substantial activity and growing innovation. There is a broad acceptance of the key principles of best practice during this phase, but again the extent of implementation is difficult to assess.

### 5.4.1 Fast, Honest, Accurate

The principles of being fast, truthful and open are accepted in European response organisations.

It is understood that the 'command and control' model of crisis communications should be replaced. How far this has actually been achieved is difficult to assess given the lack of systematic evaluation. This said, there is an acceptance of the need to improve.

The speed and effectiveness of warnings is a consistent theme, with countries seeking to implement new approaches to reacting faster and more effectively. It remains the case that the communication of uncertainty is a problem as is finding the right balance between clarity and avoiding exaggeration. Many initiatives have been developed in response to perceived failures. In France, failure in past warnings has led to the development of 'Vigilance' maps which are available in different formats and link to detailed information. In the United Kingdom the National Steering Committee on Warning and Informing the Public (NSCWIP) brings together stakeholders to develop warning guidelines. The Science Advisory Group for Emergencies (SAGE) is specifically charged with reviewing recommended actions and ensuring accuracy in claims.<sup>13</sup> In the Czech Republic, the Hydrometreological Institute (CHMU) has implemented permanent real-time updates and warnings at local, regional and national levels for all hazards within its remit.

Efforts to determine what works best are ongoing and hampered by a failure to invest in up-front communications testing, which can look at reactions of different groups and in different contexts. For example, the 'traffic light' system of weather warnings is viewed as successful in some countries but not in others. In England, the Environment Agency has moved away from traffic lights and acknowledges its difficulty in finding the most effective warning approach [34].

The challenge of the first hours of a crisis is appreciated and there is an effort to address this in guidelines [100].

Mobile applications are becoming widespread as a means of providing early warning of imminent or ongoing threats. There is no unified approach to these. Some provide limited information beyond the assessment of the situation while others provide detailed instructions and easy links to advice on what to do.

<sup>13</sup> [www.gov.uk/government/groups/national-steering-committee-on-warning-informing-the-public](http://www.gov.uk/government/groups/national-steering-committee-on-warning-informing-the-public) ;  
[www.gov.uk/government/groups/scientific-advisory-group-for-emergencies-sage](http://www.gov.uk/government/groups/scientific-advisory-group-for-emergencies-sage)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	50 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

The role which crowd-sourced information on platforms created by Google and Ushadidi can play in aiding situational awareness and sharing information during international disasters is appreciated. However, there has been no example of these platforms being used on anything approaching such a scale Europe to date. However, discussions are at an advanced stage within Europe to have such a capability ready to deploy should it be needed for a wide scale disaster.

There is no consistent practice in relation to the provision of online information though it has already become a central forum for crisis communications in Europe. In the response in the region of Saxony data has shown how there was a dramatic public demand for information online at critical moment of the 2013 floods [152]. This contrasted with the situation in Austria, where a perception that information was being made available too slowly led to the Facebook non-official page 'Hochwasserhilfe' becoming a major focus for the public. In all cases there is a policy that information should be immediately available online. In some cases a dedicated crisis website is used in order to route the public to a coordinated source (e.g. [www.crisis.nl](http://www.crisis.nl)).

It is now accepted that senior communications roles must be represented in all key decision meetings and must be fully informed of technical developments.

The critical role of political leaders as crisis communicators has not been studied extensively. In most countries they have a legally defined position in the coordination of crisis response. It is felt that the public expects to see political leaders play a central role in overseeing crisis response and expect to hear from them. There is growing evidence that the activation of a central political coordination mechanism such as COBRA in the UK, the National Security Council in the Czech Republic and the Government Crisis Management Team in Poland. Informally, coordinators look to politicians to play a lead role in providing reassurance and expressing empathy with those suffering or at risk.

In spite of this important role, arrangements are not generally in place to train elected leaders in the principles of effective communications for disasters [40].

Given the levels of tourism and non-native speakers in many parts of Europe the need to provide for different languages is understood but not uniformly addressed. Examples of good practice include the situation in Finland where emergency response centres can immediately respond in three languages and have the capability to use three more if required. In the City of Prague, all public warnings via the siren system can be broadcast in English as well as Czech.

#### 5.4.2 All Available Channels

Practice in Europe is rapidly changing, if not to an explicit 'all channels' approach certainly to a much broader approach than reliance on sirens and broadcast media.

Traditional crisis communication practice involved media briefings and alarm systems. It was believed that the broadcast media was the principal and possibly only means of reaching a large population.

Radio and television remain a priority and they retain extensive reach and trust [57]. All countries make communications available online. Online tools such as Google Crisis Maps have not been used in Europe but their potential role is acknowledged if not developed. Opt-in local warning services are common, involving SMS or voice call warnings. Traditional sirens remain in place in roughly half of EU countries.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	51 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

The establishment of crisis-specific call lines is common. For example the MSB in Sweden established such a help-line in response to the swine flu and Irish authorities established one during major storm in 2013/14 [92, 35].

The growth of social media is understood as involving a radical change in emergency and disaster communication. All countries which do not have an explicit social media policy accept the need to adopt one. Twitter and Facebook are, in particular, an accepted part of both situation awareness and communications. This is an area which is not yet standardised but it is one of the main priorities for communications policy

Mobile alerting is becoming common and is likely to become a principal means of providing warning and updates during crises. The fact that mobile phones continue to operate for a lengthy period after a power outage makes them a highly significant potential tools – something which was very important during Hurricane Sandy in 2012. In fact, having your mobile phone charged is now a commonly recommended priority action for preparedness. The level of innovation in this sphere is likely to be very significant in the immediate future. For example, Germany is moving from its Satellite Warning System (SatWaS) to the much broader and targetable Modular Warning System (MoWaS).

Responders also understand the need to be able to communicate directly, especially in the context of finding vulnerable individuals who may have not heard or ignored an evacuation warning. For example in the City of Prague during the 2013 floods cars with loudspeakers were sent into key areas to supplement the siren system, notices were posted on doors setting evacuation times and, finally, there was door-knocking.

The most advanced public statement on a multi-channel approach is the UK's 'Alerting Guidance' which adds to general advice with the provision of figures for the percentage of the population which can be reached through different channels.<sup>14</sup>

In summary, there is a clear movement towards a 'more channels' approach. It is not clear that this is moving towards the full 'all available channels' approach. For example, there is little evidence of an effort to systematically analyse effective channels of communication to various distinct groups in the population or to identify those who are not reachable through broadcast media (including internet news sites) and social media.

#### 5.4.3 Empathy not Reputation

The reflex to seek to protect an organisation's reputation in a time of crisis will probably never disappear, however there is a broadly-shared understanding of the need to give priority at all times to public safety in communications.

It is understood that delay and letting reputational concerns dominate can cause much greater problems. An example of this was seen in early-2014 in the UK, where inter-agency criticism caused substantial negative coverage.<sup>15</sup>

<sup>14</sup> [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/80229/Using-social-media-in-emergencies-smart-tips.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/80229/Using-social-media-in-emergencies-smart-tips.pdf)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	52 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

Showing empathy and understanding for the fears of people is common and part of this is expected to be the involvement of senior elected officials. It is possible for this to be seen to go too far, with, for example, some accusing UK politicians of “flood tourism” during the 2014 South of England floods.<sup>16</sup>

Measurement of public opinion on the performance of organisations during a disaster is not undertaken and, therefore, it is not possible to say to what extent current approaches to showing concern for citizens is received by them as empathetic.

#### 5.4.4 Monitor & Engage

Enhancing situational awareness is a universal objective of responder organisations and this is serving to increase levels of monitoring of public opinion and ongoing interaction with the public.

The ongoing monitoring of mass media and social media is now common. Tools to allow this become a systematic activity are being considered but have not been commonly deployed. As stated, crowd-sourced solutions such as Google Crisis Maps and Ushadidi have not been deployed in Europe for a pan-national disaster. However, there are technical discussions underway so that information is available in a suitable format for use in such tools.

As said above, social media and smartphone apps are now in use for the monitoring of a natural or man-made disaster. One example is FEMA’s app, ‘Disaster Reporter’, which allows users to submit geo-tagged disaster-related images, which are then added to a public crisis map.<sup>17</sup> Twitter can of course collect thousands of pictures or videos from the accident location. The point is that it is not necessary to choose one solution over another; they should be seen as complementary. For the collection of crisis information both a dedicated smartphone app and popular social media platforms can be used for crowdsourcing. The crucial issue is to identify the most needed data amongst the huge amount of information coming from users. The development of classification approaches is an area of ongoing attention.<sup>18</sup>

A recent survey of responders on the specific issue of social media during crises showed that responders are eager to understand social media and to interact with the public in this way [57].

In the UK the Met Office allows amateurs to upload data onto its site, giving the ability to compare official data with more localised and immediate observations [115].

#### 5.4.5 Extra Information

The amount of information beyond core warning messages which is made available during crises has increased substantially in the last decade.

<sup>15</sup> [www.theguardian.com/environment/2014/feb/09/eric-pickles-apologises-floods-environment-agency-somerset](http://www.theguardian.com/environment/2014/feb/09/eric-pickles-apologises-floods-environment-agency-somerset)

<sup>16</sup> [www.bbc.com/news/blogs-the-papers-26147224](http://www.bbc.com/news/blogs-the-papers-26147224)

<sup>17</sup> <http://irevolution.net/2013/08/13/can-official-disaster-response-apps-compete-with-twitter/>

<sup>18</sup> <https://irevolution.files.wordpress.com/2011/07/pratical-extraction-paper-2013.pdf>

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	53 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

It is now widespread practice to provide links for the public to confirm and supplement official communications if they so wish. The public is accessing this information in substantial numbers. All organisations report a major spike in visitor numbers to websites during crises.

A related point less well understood is that media outlets, particularly broadcasters both on air and through their websites and newspapers through their websites, aim to provide comprehensive guidance. There is in effect a competition to be seen as the ‘first place’ to be consulted during crises. In practice this means that the media now seeks to use supplementary information from authorities as quickly as it is available.

The availability of information outside of the response area is important because of links to those affected. The extent of provision in this area is not clear. A good practice example is the Austrian Red Cross (ARC) which is a major response and recovery agency. The ARC has a policy of segmenting the audience for information into those directly affected and those who are not but want information about how they can help and how their relatives and friends are.<sup>19</sup> In Sweden the Emergency Management Agency has a developed policy which, in particular, draws on the experience of providing information to Swedish residents affected by disasters elsewhere [100].

#### 5.4.6 Capacity

It is accepted through much of Europe that it is difficult to ensure sufficient communications skills are available at each level of crisis response.

Given the mobility of media and the ability to constantly report ‘on the ground’ it stretches communications efforts to ensure that personnel are available who are aware of the broad status of the crisis and have developed communications skills. The specific difficulty in ensuring sufficient knowledge and expertise in social media is acknowledged [123].

An example of an initiative to deal with this is found in the Netherlands where the core national crisis communications team can be supplemented from a pre-identified and trained ‘National Crisis Communications Pool’ [102].

#### 5.4.7 Cooperate & Share

All countries state an understanding of the need to have active cooperation within and between responding organisations during the response phase.

Assessing the implementation of this is difficult, but it is generally felt that the need for a ‘collective effort’ is being actioned. After-event reports seem less likely in recent years to cite a failure to cooperate or share as leading to a communications failure. This is not possible to quantify without a systematic review of such reports.

Where there has been widespread development is in the area of national crisis coordination centres. These are now common and they are increasingly taking a prominent role in coordinating communications even where there is a ‘lead agency’ principle for communications [123]. It is felt that

<sup>19</sup> <http://blog.rotekreuz.at/reacta/2014/07/13/resilienz-in-katastrophen/>

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	54 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

a well-functioning coordination centre and fast communication to the public relieves pressure on emergency numbers [92].

It is common practice for the technical aspects of communication coordination to be practiced (for example resilient links between organisations) however it is not clear how far communication with the public is exercised.

Cooperation between scientific and technical agencies and advisors is acknowledged as a necessity and both formal and informal arrangements are in place to try and reach a shared situational awareness and recommendations for public communications. The UK's Natural Hazards Partnership and SAGE group represent best practice in this field.

## 5.5 Recovery

Communication during the recovery is the least studied and least practiced part of the resilience communication process in Europe. There is no consistent approach evident and a sense that what is involved is primarily about scaling-down the response effort.

This is a potentially serious omission. Research has shown that the recovery period is one where communication continues to be extremely important. Issues of accountability are more likely to emerge in the media and there is continued public interest in the recovery effort, both among the affected and unaffected [64].

A significant development is the idea of 'beneficiary communications' which is advocated by the IFRC. This approach particular seeks to ensure that the public are directly involved in shaping recovery communications, thereby improving the effectiveness and legitimacy of actions taken during the recovery phase and modern technology has enabled various publics to be the source and senders of information as well as framing it in the aftermath of a disaster [124].<sup>20</sup>

### 5.5.1 Keep Providing Information

There is no clear approach to the amount or frequency of information to be provided during the recovery phase.

During recovery the principal focus turns to specific agencies and local authorities. Threat-related information and updates on damages are common [147]. Where there is an active recovery programme in place communication to local media is common though not highly-structured. Where the restoration of public utilities forms a significant part of the recovery effort it is common for regular updates to be provided about the numbers still without services and the expected timing of the restoration of service The role which 'local heroes' or 'responder heroes' can play in the media is appreciated and there are efforts to assist the media in moving stories from a general crisis to individual stories. This stage is marked by uncertainty reduction and reassurance [137] but it also provides an opportunity for image repair [13, 14].

<sup>20</sup> <http://www.ifrc.org/en/what-we-do/beneficiary-communications/>

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	55 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



### 5.5.2 Keep Monitoring & Engaging

Policies and practices for maintaining active monitoring of the media and online communities during recovery beyond standard day-to-day practice are not clear.

Interviews suggest that there is an active impulse to return as quickly as possible to day-to-day communications arrangements. The specific point where active monitoring and engagement with the public ceases to be a priority is not well defined.

### 5.5.3 Evaluate

While it is common practice to prepare detailed after-event evaluations of crisis response the approach to reviewing the communications dimensions is not consistent.

In some cases reviews are carried out internally. In the case of the UK, major crises are subject to highly independent public reviews and other major events are reviewed at different levels, including by local councils. There are many cases of the recommendations of such reviews being implemented, but this is not consistent [128]. In Ireland, after-event evaluations are prepared by a University department with expertise in emergency management studies. In most countries public health emergencies are subject to substantial ex-ante review of which the speed and impact of public communications is an important component.

As mentioned in the chapter on current research, this is a field which is highly dependent on case studies including after-event review for formulating best practices. Lessons learnt databases are increasingly being used to try to review errors and acknowledge strengths. Bringing these together in a systematic form and sharing them between organisations is not yet a common activity [18].

The quality and speed of evaluations, and the extent to which they are used to change subsequent practice is an area which requires detailed study.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	56 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



## 6 Conclusion: Turning theory into practice

This is a period of rapid evolution in many elements of both practice and public expectations concerning communications at all stages. This is only in part a response to the dramatic growth of online and mobile social media. There is acceptance of the need to leave behind the idea that a ‘command and control’ approach appropriate to many operational tasks can also be followed in public communications. A move towards a more consultative and 2-way approach is evident.

At least in principle there is a uniform acceptance of the most important summary finding of research in this field: that effective communication to support civil society resilience is strategic and continuous.

While there is no single model of best practice there is agreement on many of the concepts which should underpin practice according to research. There is clearly an opportunity to use this as a foundation on which to develop a broad range of shared practices.

Organisations with responsibilities for communicating with the public in order to enhance civil society resilience carry many other responsibilities. They rarely have significant staffing or financial resources in order to update strategies and practices in light of the latest research. Linking research output to accessible and implementable best practice guidelines should be a general priority.

### Set out underpinning concepts and actioning principles to guide practice within and across organisations

Core principles and best practices have largely been developed in the context of international research but have also been substantively validated in a European context – particularly through EU-funded projects. The primary focus of this review has been to present this work in a form which makes it accessible and useful to practitioners or end-users. A complex field has been defined in the framework of five underpinning concepts and 13 actioning principles. These combine approaches in the theoretical literature and actual strategies.

Work to date has confirmed that this is an approach to presenting best practice which is viewed by experienced senior personnel in responder organisations as helpful to them in developing communications plans.

### Establish regular monitoring of key issues for framing effective communications

In most social and economic fields regular and rigorous data gathering is fully established. In contrast, and with few exceptions, there is no such commitment to data which is central to framing effective communications for civil society resilience, or monitoring their impact. For example, public knowledge of key preparedness information, public trust in communicators and effective channels of

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	57 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

communication has substantial implications for communications strategies yet are not systematically monitored. Once off, infrequent or localised data collection cannot fill this gap.

The UN, EU and OECD have each separately called for a new commitment to gathering and publishing data in this field. This includes reporting on communications practices and investment. Future action is required in order to provide this essential foundation for evidence-based policy and practice.

### Build a more dynamic interaction between communications practitioners

Practitioners in this field are eager to engage with others who can share their experiences and suggest new approaches. Exchanges between public communicators are not as developed or extensive as those in more technical civil protection roles. There is an openness to be part of a broader community of practitioners/end-users.

In general, a dynamic community of interest is a required part of improving the coordination and effectiveness of communications for civil society resilience through Europe. The Disaster Risk Management Knowledge Centre initiative offers a forum in which practitioners and researchers can engage. Other initiatives should be considered, including in the context of the growing sense-making and information exchange roles of EU bodies such as the ERCC.

### Invest in research on, and presentation of, communications during the recovery phase

The element of communications which is least developed and least understood by practitioners is the role and potential of communication during the recovery phase. The bulk of research and strategies focusses on mitigation, preparedness and response communications. In terms of a long-term commitment to a model of communications for civil society resilience which is strategic and continuous further investment in research to fill this gap is required. In addition, the dissemination of examples of practice would be of significant assistance to authorities responsible for developing overall strategies.

### Recognise the importance of developing tested messages in advance of their use during the response phase

Outside of the area of public health and weather-related warnings it is not common for authorities to develop and test detailed messages and Frequently Asked Questions in advance of the response phase. Given how important message wording is for the effectiveness of communications this is a major gap (this is a primary focus of D350.2). The effectiveness in the distribution and impact of key messages (i.e., people act in the intended manner), as well as the channel capabilities in a time of crisis can be tested in scenario-based experiments (this is a primary focus of D350.3).

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	58 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

**Incorporate basic training concerning the concepts underpinning and actioning principles for effective communications practice in all core training for responders, policy makers and decision makers.**

Strong cooperation within and between organisations is a foundation for effective communications with the public. Having all persons ‘on the same page’ is more likely to happen if they share at least a basic understanding of the principles which communications work is seeking to implement. In addition, every member of an organisation may have some interaction with the public and, as such, is potentially a communicator.

In relation to senior decision makers, and in particular political leaders at all levels, providing some means of ensuring that they engage with best practice principles before they assume a role in communicating during major emergencies is a widely recognised gap.

**Develop and implement European standards for communications planning and key elements of providing information to the public.**

The development of greater national and international cooperation in communication for civil society resilience, as well as the encouragement of innovation in this field, requires a greater acceptance of shared principles and, in key cases, technical implementations. The potential for innovation in realms such as Social Media Analysis Tools (SMAT), integrated alerting and informing platforms and mutual assistance requires a broader base of agreed standards. An effective way of doing this would be the development of European standards in alerting and crisis communication.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	59 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 7 Communications in DRIVER's future work

The core objective of DRIVER is to enhance innovation and cooperation in crisis management throughout Europe. It has ambitious plans for developing a portfolio of solutions which addresses key needs of end-users, creates Test-beds which enable innovation and assist in the creation of a community of users in this field. The first phase of DRIVER's work has been the completion of SOTA reviews which provide accessible overviews of key fields, here in crisis management. For the remaining duration of the project's work it is intended to provide solutions which address identified practice needs, and test them in experimentation activities.

In the case of the role of communications in promoting civil society resilience, further work is informed by the core insights outline in Section 1.2.1. Work will focus on solutions which help to address certain of the concepts and actioning principles identified in Table 3 and Table 4 as having an unclear level of acceptance at a strategic and planning level in Europe. Specifically these are the concepts of Context, Diversity and 2-Way and the actioning principles of Understand in the preparedness phase and All-Available Channels and Capacity in the Response phase. These have been chosen as they have been identified in discussions with end-users as areas of the most immediate interest.

The specific actions will include the development of three specific solutions:

### Guide to Best Practice for Civil Society Resilience

Based on this review, the Guide will be a short and user-friendly over-view of the underpinning concepts and actioning principles. It will be developed in cooperation with end-user organisations in at least three EU member states and be targeted at general as well as communications personnel. In addition, it will be distributed to professional participants in DRIVER experiments and the Test-bed.

### Training Course in Communication for Civil Society Resilience (EXPE 350.1)

To be developed in cooperation with a national-level crisis coordination centre, this short course will aim to assist both communications and general personnel from a diverse range of organisations to achieve a basic shared understanding of effective communications practice. This will further be offered as a short training for participants in DRIVER experiments and the Test-bed.

### Solution for Identifying Appropriate Messages and Channels of Communication (EXPE350.2)

There is at present no established methodology for developing messages appropriate to different stakeholder groups or the most effective channels for communicating with them. Using a significantly adapted methodology from the field of public health communications called Stakeholder Message Mapping, this solution will provide an accessible methodology for working with stakeholder groups during the preparedness phase to verify information needs, message wording and channels of communication for various crisis scenarios. This solution will be available for preparing DRIVER major

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	60 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

experiments, enabling the incorporation of best practice in communications into technological solutions and scenario development.

	Best Practice Guide	Training	Message Mapping
<b>CONCEPTS</b>			
Context	Introduction to concept and its application	Interactive introduction to concept and its application	Practical method for application of concept to development of messages
Diversity	Introduction to concept and its application	Interactive introduction to concept and its application	Practical method for application of concept to message development
2-Way	Introduction to concept and its application	Interactive introduction to concept and its application	Practical method for definition of effective channels for 2-way communication/
<b>ACTIONING PRINCIPLES</b>			
Understand	Introduction to actioning principle and sources for further exploring implementation	Interactive introduction to best practice with case studies and provision of additional resources	Practical method for implementing principle of building understanding of stakeholders during preparedness phase
All Available Channels	Introduction to actioning principle and sources for further exploring implementation	Interactive introduction to best practice with case studies and provision of additional resources	Practical method for identifying new and preferred channels for targeting information to stakeholders.
Capacity	Introduction to actioning principle and sources for further exploring implementation	Interactive introduction to best practice with case studies and provision of additional resources	No direct relevance

Table 5: Relevance of proposed solutions to identified gaps

In addition, these communications will be included in DRIVER's work on standardisation and the building of a community of interest.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	61 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## References

- [1] ACRIMAS (2011). D4.2 'Gap Analysis Report', deliverable of FP7 project funded under grant no. 261669 (available at [www.acrimas.eu](http://www.acrimas.eu) retrieved 2/9/2014)
- [2] ACRIMAS (2012). D5.1 'Approaches and Solutions', deliverable of FP7 project funded under grant no. 261669 (available at [www.acrimas.eu](http://www.acrimas.eu) retrieved 2/9/2014)
- [3] Affect (2014) Crisis Management in the Social Media Age: A Guide to Integrating Social Media in Your Crisis Communications Strategy[Online] Available at: [http://prcouncil.net/wp-content/uploads/2011/03/Affect\\_Social\\_Media\\_Crisis\\_Management\\_White\\_Paper.pdf](http://prcouncil.net/wp-content/uploads/2011/03/Affect_Social_Media_Crisis_Management_White_Paper.pdf)(Accessed January 2016).
- [4] Andrulis, D.P., Siddiqui, N.J. & Gantner, J.L.(2007). "Preparing Racially And Ethnically Diverse Communities For Public Health Emergencies". Health Affairs 26(5):1269-1279
- [5] ANVIL FP7 Project, (2013). Analysis of Civil Security Systems in Europe, Deliverable 2.1(Available at: [www.anvil-project.net/downloads/](http://www.anvil-project.net/downloads/) retrieved 26/11/14).
- [6] Avery, E.J., et al, (2010). 'A quantitative review of crisis communication research in public relations from 1991 to 2009', Public Relations Review 36, pp 190-192
- [7] Ballantyne, M., Johnston, Kozuch, D.M & Daly, M. (2000). "Information on Volcanic and Earthquake Hazards: The Impact on Awareness and Preparation," Institute of Geological and Nuclear Sciences Report 2000/2, Lower Hutt.
- [8] Barge, J.K. and Craig, R.T. (2009), Practical theory in applied communication scholarship. In L.R. Frey and K.N. Cissna (Eds.) Routledge Handbook of Applied Communication Research (pp.58-78) New York, NY: Taylor and Francis.
- [9] Bean, H., Sutton, J., Liu, B.F., Madden, S., Wood, M.M. & Mileti, D.S. (2015). "The study of Mobile Public Warning Messages: A Research Review & Agenda", Review of Communication, 15(1), 60-80.
- [10]Baubion, C. (2013). "OECD Risk Management: Strategic Crisis Management", OECD Working Papers on Public Governance, No. 23, OECD Publishing (Available at: <http://dx.doi.org/10.1787/5k41rbd1l7r7-en> retrieved 24/3/2015).
- [11]Bennett, P, Calman, K, Curtis, S, Fischbacher-Smith, D (Eds) (2010). Risk Communication and Public Health, 2nd Edition, Oxford University Press
- [12]Beneito-Montagut, R., Anson, S., Shaw, D. & Brewster, C. (2013), "Governmental Social Media Use for Emergency Communication", Proceeding of the 10th ISCRAM Conference.
- [13]Benoit, W.L. (2000) Another visit to the theory of image restoration strategies. Communication Quarterly 18, pp. 40-44.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	62 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- [14]Benoit, W.L. (2005) Image Restoration Theory. In R.L. Heath (Ed.) Encyclopedia of Public Relations (Vol. 2, pp.407-410) Thousand Oaks, CA: Sage.
- [15]BESECU Project (2013). Final Report of BESECU Project, Human behaviour in crisis situations: a cross-cultural investigation to tailor security-related communication, Ref 218324, (available at: [http://cordis.europa.eu/result/rcn/56077\\_en.html](http://cordis.europa.eu/result/rcn/56077_en.html) retrieved 15/11/2014)
- [16]Bezuyen, M.J., Van Duin, M.J. (1998). 'Flood Management in the Netherlands', Australian Journal of Emergency Management, Winter, pp 43-49.
- [17]Birkholz, S. & Jeffrey, P. (2013). "Exploring protection motivation in Wilhelmsburg (Hamburg): is the threat 'real' to the people of the Elbe-Insel?", presentation to the ICFR International Conference on Flood Resilience, September 2013, (based on Corfu FP7 available at: <http://www.corfu7.eu/> retrieved 8/12/2014).
- [18]Bjurman, U. (2012), "Opportunities for International Cooperation", presentation to the joint OECD/IRGC Expert Workshop: Risk & Crisis Communications, Opportunities and Challenges of Social Media, (available at: <http://irgc.org/wp-content/uploads/2012/06/U.-Bjurman-OECD-IRGC-workshop.pdf> retrieved 10/11/2014)
- [19]Boin, A. and McConnell, A. (2007), 'Preparing for Critical Infrastructure Breakdowns: the limits of crisis management and the need for resilience.' Journal of Contingencies and Crisis Management 15(1), 50-59.
- [20]Bradford, R.A., O'Sullivan, J.J. et al (2012), "Risk Perception – issues for flood management in Europe", Natural Hazards and Earth Systems Sciences, 12, 2299-2309.
- [21]Bushfire Cooperative Research Centre and the Australasian Fire and emergency service Authorities Council (2012). Gender and Bushfire. Melbourne: Fire Note No. 101 (available at <http://www.bushfirecrc.com/news/news-item/gender-and-bushfire> retrieved 20/4/2015)
- [22]Chatfield, A.T., Scholl, H.J & Brajawidagda, U. (2013). 'Tsunami early warnings via Twitter in government: Net-savvy citizens' co-production of time-critical public information services', Government Information Quarterly, 30(1):pp 377–386
- [23]Comfort, L.K. (1994). 'Self-organisation in complex systems', Journal of Public Administration Research Theory 4(3), 393-410.
- [24]Coombs, Timothy, W. (2010). "Parameters for Crisis Communication". In The Handbook of Crisis Communication edited by W. Timothy Coombs and Sherry J. Holladay, Oxford: Wiley-Blackwell
- [25]Coombs, W.T. & Holladay, S.J. (2010). "The Handbook of Crisis Communication", J. Holladay, Oxford: Wiley-Blackwell.
- [26]Coombs, W.T. & Holladay, S.J., (2014). "How publics react to crisis communication efforts ", Journal of Communication Management, Vol. 18(1): pp. 40-57
- [27]Courtney, J., Galen, C. and Reynolds, B. (2003) How the CDC is meeting the training demands of emergency risk communication. Journal of Health Communications: International Perspectives 8(1), 128-129.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	63 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



- [28]Covello, V. (2002). "Message mapping, risk and crisis communications". Invited paper presented at World Health Conference on Bio-Terrorism and Risk Communication, Geneva, Switzerland, October 1st 2002. (available at: <http://rcfp.pbworks.com/f/MessageMapping.pdf> retrieved 22/4/2015)
- [29]Covello, V.T.(2007), Effective risk and crisis communication during water security emergencies: Summary report of EPA sponsored message mapping workshops. National Homeland Security Research Center, Office of Research and Development, US Environmental Protection Agency. (available at [www.epa.gov](http://www.epa.gov) retrieved 22/4/2015)
- [30]Covello, V.T., & Sandman, P.M. (2001). 'Risk communication: Evolution and revolution'. In: Wolbarst A, [ed.] Solutions to an Environment in Peril. Baltimore, MD: John Hopkins University Press: pp164-178.
- [31]Czech Republic Ministry of the Interior (2014), Koncepce ochrany obyvatelstva do roku 2020 s výhledem do roku 2030 (Civil protection strategy to 2020 and directions to 2030), Prague, Ministry of the Interior.
- [32]Daniel, H. Schräss, K. & Warner, K. (Eds) (2013), 'CATALYST Synthesis Report of Best Practices, Networks, Research Gaps, and Recommendations for Fostering Capacity Development for Disaster Risk Reduction and Climate Change Adaptation: A combined deliverable incorporating D5.1, D5.2, and D5.3.'. Catalyst FP7 Project. (available at: [www.catalyst-project.eu](http://www.catalyst-project.eu) retrieved 16/1/2015)
- [33]Demeritt, D, et al, (2013), "Communication and transfer to decision makers, stakeholders and end users with standard methods: a baseline description of risk communication practice in the KULTURisk case studies", part of FP7 project ref 265280. (available at [www.kulturisk.eu](http://www.kulturisk.eu) retrieved 20/8/2014)
- [34]Demeritt, D., et al (2011), Models of 'good' risk communication for flooding and other water-related hazards: a critical review. Outcome of Kulturisk FP7 project ref 265280. [Online]Available at: [www.kulturisk.eu](http://www.kulturisk.eu) (retrieved 20/8/2014)
- [35]Department of the Environment, Community & Local Government, Ireland (2014), Report on severe weather: December 2013 to January 2014. Dublin, DEC&LG.
- [36]Drabek, T.E.(1999) Understanding disaster warning responses. Social Sciences Journal 36(3), 515-523.
- [37]DRIVER (2014a). Identifying major factors of risk perception, D32.1.
- [38]DRIVER (2014b). State of the Art Review of Societal Resilience, D31.21.
- [39]DRIVER, (2014c). Country reviews of CM organisations, capabilities, policies & legislation, D82.1 & D83.1.
- [40]DRIVER, (2015). Learning in crisis management 2025: state of the art & objectives, D51.2.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	64 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



- [41]Eirgrid (2013). Blackstart Emergency Communications Plan. Dublin: Version 2.0 (available at: <http://www.eirgrid.com/media/BlackstartEmergencyCommunicationsPlan%20PUBLICVersion2.0.pdf> retrieved 21/4/2015)
- [42]Enander, A., Hede, S. & Lajksho, O. (2009). "One crisis after another: Municipal experiences of severe storm in the shadow of the tsunami", *Disaster Prevention and Management*, 18(2), 137-149.
- [43]Estonian Government (2011) 'Government Communication Handbook' [Online] Available at: [https://riigikantselei.ee/sites/default/files/content-editors/Failid/valitsuskommunikatsiooni\\_kasiraamat\\_eng.pdf](https://riigikantselei.ee/sites/default/files/content-editors/Failid/valitsuskommunikatsiooni_kasiraamat_eng.pdf) (Accessed December 2014).
- [44]European Centre for Disease Prevention and Control (2012). Meeting Report Communicable disease prevention among Roma Vienna, 27–29 November 2011. Stockholm
- [45]European Commission (2013). "Joint communication to the European parliament and the Council, The EU's comprehensive approach to external conflict and crises"
- [46]European Commission (2014), "The Post 2015 Hyogo Framework For Action: Managing Risks To Achieve Resilience." Communication SWD (2014)134.
- [47]European Commission DG Environment (2008). Member States' approaches towards prevention policy: a critical analysis, (available at: [http://ec.europa.eu/echo/files/civil\\_protection/](http://ec.europa.eu/echo/files/civil_protection/) retrieved 10/11/2015)
- [48]European Commission DG Environment (2015a). Implementation of the Floods Directive, (available at: [ec.europa.eu/environment/water/flood\\_risk/implem.htm](http://ec.europa.eu/environment/water/flood_risk/implem.htm). retrieved 21/3/2015)
- [49]European Commission DG Environment (2015b). The Seveso Directives, [Online] Available at: [ec.europa.eu/environment/seveso/](http://ec.europa.eu/environment/seveso/) (accessed 21/3/2015)
- [50]Fechner, S. (2014). CAP Implementation at Deutscher Wetterdienst, PPT presentation (available at: <http://slideplayer.com/slide/750784/> retrieved 20/2/2015).
- [51]FEMA (2004). Are You Ready?: An In-Depth Guide to Citizen Preparedness, [Online]Available at: <http://www.ready.gov/are-you-ready-guide> (retrieved 20/2/2015)
- [52]Fink, S. (1986) Crisis Management: Planning for the Inevitable. New York, NY: American Management Association.
- [53]Finland, Ministry of the Interior (2012), Finland National Platform for Disaster Risk Reduction, Helsinki.
- [54]Fischhoff, B. (1995). "Risk Perception and Communication Unplugged: Twenty Years of Process", *Risk Analysis*, 15(1), 137-45.
- [55]Fishman, D.A. (1999). "ValueJet flight 592: crisis communication theory blended and extended", *Communications Quarterly* 47(4), 345-375.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	65 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- [56]Flanagan and Hancock (2010). Reaching the hard to reach' - lessons learned from the VCS (voluntary and community Sector). A qualitative study BMC Health Services Research. Open Access Research Article (available at <http://link.springer.com/article/10.1186%2F1472-6963-10-92>, retrieved 22/4/2015)
- [57]Flizikowski, A, et al, (2014). "Social media in crisis management – the iSAR+ project survey", Proceedings of the 11th international ISCRAM Conference, May 2014: pp707-711.
- [58]Frandsen, F. and Johansen, W. (2010) Crisis communication, complexity, and the cartoon affair: a case study. In W.T.Coombs and S.J.Holladay (Eds.) The Handbook of Crisis Communication (pp. 425-448). Oxford: Wiley-Blackwell.
- [59]Funubashi, Y., and Kitazawa, K. (2012). 'Fukushima in review: A complex disaster, a disastrous response', Bulletin of the Atomic Scientists, 68(2), 9-21.
- [60]Garnett, J.L., & Kouzmin, A. (2007). 'Communicating throughout Katrina: Competing and complementary conceptual lenses on crisis communication', Public Administration Review, Special Edition, 171-188.
- [61]Government of Austria (2005). National Report in Preparation for Kobe Conference, [Online] Available at: [www.preventionweb.net](http://www.preventionweb.net) (retrieved 1/9/2014)
- [62]Government of Estonia (2014), Kriisireguleeimise Juhend Kohalikule Omavalitsusele (Crisis Strategy), Tallinn, Ministry of Interior.
- [63]Grazia-Busa, M., Mussachio, M.T., Finan, S. & Fennel, C. (2015), "Trust Building through social media communications in disaster management", presented to WWW 2015 Conference, Florence, May 2015.
- [64]Greenberg, B.S. and Gantz, W. (eds.) (1993) Desert Storm and the Mass Media. Cresskill, NJ: Hampton Press.
- [65]Guth, D.W. (1995) Organizational crisis experience and public relations roles. Public Relations Review 27(2), 123-136.
- [66]Hagen, K. et al (2014). Fortress Project Deliverable D3.1: Crisis case studies of cascading and/or cross- border disasters, [Online] Available at: [www.fortress-project.eu](http://www.fortress-project.eu) (retrieved 10/2/2015)
- [67]Hallahan, K. (2005) Framing Theory. In R.L. Heath (ed) The Encyclopaedia of Public Relations (pp.340-343). Thousand Oaks, CA: Sage.
- [68]Handmer, J.W. & Dovers, S. (2007), The handbook of disaster and emergency policies and institutions, London, Earthscan.
- [69]Harro-Loit, H., Triin Vihalemm and Kadri Ugur (2012). "Cultural Experience as a (Critical) Factor in Crisis Communication Planning". Journal of Contingencies and Crisis Management 20 (1), 26-38.
- [70]Hayles, N.K. (1990) Chaos Bound: Orderly Disorder in Contemporary Literature and Science. Ithaca, NY: Cornell University Press.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	66 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- [71]Helsloot, I., et al (2014). "Guidelines for the use of new media by public and private organisations", Delivered as part of the COSMIC FP7 project, Grant Number 312737, [Online] Available at: <http://www.cosmic-project.eu/> (retrieved 9/1/2015)
- [72]Homeland Security (2014) Using Social Media for Enhanced Situational Awareness and Decision Support {Online} Available at: <http://www.firstresponder.gov/TechnologyDocuments/Using%20Social%20Media%20for%20Enhanced%20Situational%20Awareness%20and%20Decision%20Support.pdf> (Accessed January 2016).
- [73]Horvath, A. et al (2007). 'The Constitution Day Storm in Budapest: Case Study of the August 20th 2006 severe storm', in IDŐJÁRÁS Quarterly Journal of the Hungarian Meteorological Service, 111(1), 41–63.
- [74]Hyvärinen, J., Laajalahti, A. and Vos, M. (2015) 'Enhancing citizen response to crises through communication: investigating expert views' in International Journal of Emergency Management, 11(4) : 302-319.
- [75]IATA (2014) Crisis Communications and Social Media: A best practice guide to communicating in an emergency.[Online] Available at: <https://www.iata.org/publications/Documents/social-media-crisis-guidelines.pdf> (Accessed January 2016).
- [76]IFRC (2012). The road to resilience. Bridging relief and development for a more sustainable future. Geneva:IFRC.
- [77]Intergovernmental Oceanographic Commission (2012). Tsunami, The Great Waves, Second Revised Edition. (English.), illus. IOC Brochure 2012-4: p.16 . Paris:UNESCO.
- [78]Ivarsson, S. (2015), "New Method for evaluation of crisis communication in exercises – involve the public", Proceeding of the ISCRAM 2015 Conference.
- [79]Kendra, J.M. and Wachtendorf, T. (2007), 'Community Innovation and Disasters' in H. Rodriguez, E.L. Quarantelli and R.R.Dynes (Eds.) Handbook of Disaster Research (pp.316-334). New York, NY: Springer.
- [80]Klaft, M. ed. (2014). Current issues in Crisis Communication and Alerting, Berlin, Fraunhofer Verlag (output of Opti-Alert FP7 project available at: [www.opti-alert.eu/results](http://www.opti-alert.eu/results) retrieved 2/2/2015)
- [81]Kluckner, S., et al (2012)"Report on qualitative and quantitative factors in human behaviour related to alerting", Proceedings of the 9th International ISCRAM Conference – Vancouver, Canada, April 2012, (available at: <http://www.iscramlive.org/ISCRAM2012/proceedings/209.pdf> retrieved 20/4/2015)
- [82]Kurzenhäuser, S., Epp, A. , Hertel, R. & Böhl, G.-F. (2010). "Effekte der Risikokommunikation auf Risikowahrnehmung und Risikoverständnis von Zielgruppen", Berlin.
- [83]Kweit, M.G. & Kweit, A.W. (2004). "Citizen participation and citizen evaluation in disaster recovery", American Review of Public Administration, 34(4), 354-373.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	67 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- [84]Leiss, W. (1996). Three phases in the evolution of risk communication practice. *Annals of the American Academy of Political and Social Science*, 545, 85-94
- [85]Leonard, G.S., et al (2009). 'Developing effective warning systems: Ongoing research at Ruapehu volcano, New Zealand', *Journal of Volcanology and Geothermal Research*, 172:pp.199–215.
- [86]Lindell, M.K. and Perry, R.W. (2004) *Communicating Environmental Risk in Multi-ethnic Communities*. Thousand Oaks, CA: Sage.
- [87]Linn, I., & Petersen, D.D., (2007), *Risk Communication in Action: The tools of message mapping*, Washington D.C., Environmental Protection Agency.
- [88]Littlefield, R.S., Reiersen, J., Cowden, K., Stowman, S. and Long Feather, C. (2009). "A case study of the Red Lake, Minnesota, school shooting: intercultural learning in the renewal process." *Communication, Culture and Critique* 3, 361-383.
- [89]Littlejohn, S.W. and Foss, K.A. (2011) *Theories of Human Communication* (10th Edition). Long Grove, IL: Waveland Press.
- [90]Maguire, S. and Ellis, J. (2009) *The precautionary principle and risk communication*. In R.L.Heath and H.D.O'Hair (Eds.) *Handbook of Risk and Crisis Communication* (pp.119-137). New York, NY: Routledge.
- [91]Martens, T., Garrelts, H., Grunenberg, H, & Lange, H. (2009). 'Taking the heterogeneity of citizens into account: flood risk communication in coastal cities – a case study of Bremen', *Nat. Hazards Earth Syst. Sci.*, 9, 1931–1940.
- [92]MASSCRISCOMM (2012), *The Mass Crisis Communication with the Public Project*, (available at: [www.masscriscom.eu](http://www.masscriscom.eu) retrieved 23/7/2014)
- [93]Mileti, D.S. and Fitzpatrick, C. (1992), *The causal sequence of risk communication in the Parkfield earthquake prediction experiment*. *Risk Analysis* 12(3), 393-400.
- [94]Mileti, D.S. and Sorensen, J.H. (1990) *Communication and Emergency Public Warning*. ORLN-6609. Washington, DC: Federal Emergency Management Administration.
- [95]Mileti, D. & O'Brien, S. (1992). "Warning During Disaster: Normalizing Communicated Risk," *Soc. Probl.*, 39(1), 40–57.
- [96]Mileti, D. et al (2006). *Annotated Bibliography for Public Communication on Warning for Public Protection Actions, Response and Education*, (available at: <http://www.colorado.edu/hazards/publications/informer/infrmr2/pubhazbibann.pdf> retrieved 20/3/2015)
- [97]Ministry of Ecology, Sustainable Development and Energy (2013). *Les Français et les risques naturels* (national survey), Paris, November 2013.
- [98]Moe, T.L. & Pathranarakul, P. (2006). "An integrated approach to natural disaster management", *Disaster Prevention and Management: An International Journal*, 15(3), 396 – 413.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	68 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- [99] Moe, T.L. & Pathranarakul, P. (2006). "An integrated approach to natural disaster management", *Disaster Prevention and Management: An International Journal*. 15(3), 396 – 413.
- [100] MSB (Swedish Emergency Management Agency) (2008). *Crisis Communications Handbook - Summary and translation of the Swedish "Handbok i kriskommunikation"*, MSB, Education Series 3.
- [101] Murphy, P. (1996). "Chaos theory as a model for managing issues and crisis", *Public Relations Review* 22, 95-113.
- [102] Netherlands Ministry of Security & Justice (2013). *National Manual for Decision-Making in Crisis Situations – the Netherlands*, Ministry of Security and Justice, The Hague (available at: <https://english.nctv.nl/publications-products/brochures/> retrieved 20/8/1014)
- [103] Netherlands Ministry of Security & Justice (2014). *Risico-en Crisisbarometer (Risk and Crisis Barometer)*, Ministry of Security and Justice, The Hague (available at: [www.nctv.nl/actueel/nieuws/risico-en-crisisbarometer-oktober-2014.aspx](http://www.nctv.nl/actueel/nieuws/risico-en-crisisbarometer-oktober-2014.aspx) retrieved 13/3/2015)
- [104] New South Wales Rural Fire Service (2012a). *Bush Fire Myths: Knowing the Facts May Save Your Life*. State of New South Wales, Bush Fire Safety 10
- [105] New South Wales Rural Fire Service (2012b). *Bush Fire Alerts*. State of New South Wales, Bush Fire Safety 06
- [106] New South Wales Rural Fire Service (2012c). *AIDER Program: Assistance for Infirm, Disabled and Elderly Residents*. State of New South Wales, Vulnerable Communities 01.
- [107] New South Wales Rural Fire Service (2013). *Bush Fire Survival Plan*. State of New South Wales.
- [108] Noar, S.M., Harrington, N.G., and Aldrich, R.S. (2009). "The role of message tailoring in the development of persuasive health communication messages", *Communication Yearbook* 33, 72-133.
- [109] Norris, F.H., Stevens, S.P., Pfefferbaum, B., Wyche, K.F. and Pfefferbaum, R.L. (2008), *Community resilience as a metaphor, theory, set of capabilities, and strategy for disaster readiness*. *American Journal of Community Psychology*, 41(1-2), 127-150.
- [110] NRC (National Research Council) (1989) *Improving Risk Communication*. Washington, DC: National Academies Press.
- [111] NRC (National Research Council) (2011) *Public Response to Alerts and Warnings*. Washington, DC: National Academies Press.
- [112] O'Neill, O. (2002), *A Question of Trust: BBC Reith Lecture Series*, BBC (available at: <http://www.bbc.co.uk/radio4/reith2002/> accessed 15/1/2015)
- [113] OECD (2014a). *Boosting Resilience through Innovative Risk Governance*, Paris, OECD Publishing.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	69 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- [114] OECD (2014b). Recommendation of the Council on the Governance of Critical Risks adopted 6 May 2014
- [115] OECD, UNISDR & European Commission (2013). United Kingdom Peer Review – Building resilience to disasters: Implementation of the Hyogo Framework for Action (2005-2015), Paris, OECD Publishing.
- [116] OECD, UNISDR & European Commission (2014). Finland Peer Review - Building Resilience to Disasters: Implementation of the Hyogo Framework for Action (2005-2015). Peer Review Report, Finland. Paris, OECD Publishing.
- [117] Olsson, E-K. (2014). 'Crisis communication in public organisations: Dimensions of crisis communication revisited', Journal of Contingencies and Crisis Management, 22(2), 113-125.
- [118] Orr P., Twigger-Ross C. (2009). Communicating Risk and Uncertainty in Flood Warnings: A Review of Defra/Environment Agency FCERM Literature. Science project SC070060/SR2. Bristol: Environment Agency.
- [119] Palenchar, M.J. and Heath, R.L. (2002) "Another part of the risk communication model: analysis of risk communication process and message content", Journal of Public Relations Research 14(2), 127-158.
- [120] Palttala, P. & Vos, M. (2011). "The crisis communication scorecard: a tool for crisis communication evaluation" Outcome of FP7 project 217889, (available at: [www.crisiscommunication.fi](http://www.crisiscommunication.fi) retrieved 1/9/2015)
- [121] Palttala, P., C. Boan, R. Lund and M. Vos (2012). "Communication Gaps in Disaster Management: Perceptions by Experts from Governmental and Non-Governmental Organizations". Journal of Contingencies and Crisis Management, 20(1), 2-12.
- [122] Patton, D., Millar, M. and Johnston, D. (2001), New frames on crisis: citizen journalism changing the dynamics of crisis communication. International Journal of Mass Emergencies and Disasters, 29(3), 181-202.
- [123] Pawlak, P. & Ricci, A. [eds] (2014). Crisis Rooms: towards a global network?, Paris, European Union Institute for Security Studies.
- [124] Pechta, L.E., Brandenburg, D.C. and Seeger, M.W. (2010) Understanding the dynamics of emergency communication: propositions for a four-channel model. Journal of Homeland Security and Emergency Management, 7(1), doi: 10.2202/1547-7355.1671.
- [125] Persson, A. (2010). 'Mathematics versus common sense: the problem of how to communicate dynamic meteorology', Meteorological Applications, 17(1), 236-242.
- [126] Pew Research Centre (2011). "Strong public interest in Japan disaster", news release on results of News Interest Index Survey March 10-13 2011, (available at: <http://www.people-press.org/2011/03/15/strong-public-interest-in-japan-disaster/> retrieved 21/3/2015)
- [127] Pitt, M. (2008) Learned Lessons from the 2007 Floods: An Independent Review by Sir Michael Pitt, (available at: <http://www.floodreview.org.uk/> retrieved 21/3/2015)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience				Page:	70 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status: Final



webarchive.nationalarchives.gov.uk/20100807034701/http://archive.cabinetoffice.gov.uk/pittreview/the-pittreview/final\_report.html retrieved 20/3/2015)

- [128] Pollock, K. (2013). 'Review of persistent lessons identified relating to interoperability from emergencies and major incidents since 1986 – A report commissioned by the Cabinet Office Civil Contingencies Secretariate', Emergency Planning College Occasional Papers, 6.
- [129] Pont Sorribes, C. & Cortinas Rovira, S. (2011). "Journalistic practice in risk and crisis situations: Significant examples from Spain", Journalism, 12(8), 1052-1066.
- [130] Preece, G., Shaw, D. & Hayashi, H. (2015), "Application of the Viable System Model to analyse communications structures: A case study of disaster response in Japan", European Journal of Operational Research, 243, 312-322.
- [131] Prior, T. & Hagmann, J. (2014). 'Measuring resilience: methodological and political challenges of a trend security concept', Journal of Risk Research, 17(3), 281-298.
- [132] PRSA(2013) "Social Media Anxiety: 140 Characters Into, or Out of, a Crisis" – August 1, 2013 - available at: [http://www.prsa.org/Intelligence/Tactics/Articles/view/10275/1081/Social\\_media\\_anxiety\\_140\\_characters\\_into\\_or\\_out\\_of#.VqJ2SvmLTIU](http://www.prsa.org/Intelligence/Tactics/Articles/view/10275/1081/Social_media_anxiety_140_characters_into_or_out_of#.VqJ2SvmLTIU) {Accessed January 2016}.
- [133] Norris, F.H., Stevens, S.P., Pfefferbaum, B., Wyche, K.F. & Pfefferbaum, R.L. (2008), 'Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness', American Journal of Community Psychology, 41(1), 127-150
- [134] R Zimmerman, C.E. Restrepo, A Culpen, WE Remington, A Kling, I Portelli & G.L. Foltin (2010). 'Risk communication for catastrophic events: results from focus groups', Journal of Risk Communication, 13(7), 913-935
- [135] Reich, Z., Bentman, M., & Jackman, O.(2011). A Crisis Communication Guide for Public Organisations FP7 project outcome, (available at: [www.crisiscommunication.fi](http://www.crisiscommunication.fi) retrieved 2/10/2014)
- [136] Reynolds, B., Hunter-Galdo, J. and Sokler, L. (2002), Crisis and Emergency Risk Communication. Atlanta, GA: Centres for Disease Control and Prevention.
- [137] Reynolds, B. & Seeger M.W. (2005). "Crisis and emergency risk communication as an integrative model", in Journal of Health Communication, 10(1), 43-55.
- [138] Ritzer, G. and Goodman, D. (2003). Sociological Theory, 6th Edition. New York: McGraw Hill.
- [139] Rogers, G.O. and Sorensen, J.H.(1991) Diffusion of emergency warning: comparing empirical and simulation results. Risk Analysis 11(1), 117-134.
- [140] Roth, D. & Warner, J. (2007). "Flood risk, uncertainty and changing river protection policy in the Netherlands: the case of 'Calamity Polders'", Tijdschrift voor Economische en Sociale Geografie, 98(4), 519-525.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	71 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- [141] Sallai, M. (2007). 'The tragic story of the August 20th 2006 severe thunderstorm in Budapest as an example of the importance of good communication in disaster management', paper presented at the 7th EMS and 8th ECAM Annual Meetings 2007. (available at: <https://www.wmo.int/pages/prog/drr/events/Pula/Presentations/MHEWSHungary.pdf> retrieved 17/3/15)
- [142] Sandman, P.M. (2003), Four Kinds of Risk Communication, (available at: [www.psandman.com/col/4-kind-1.htm](http://www.psandman.com/col/4-kind-1.htm) retrieved 10/1/2015)
- [143] Scottish Government & British Red Cross (2014), Emergency Preparedness in Scotland 2014, Edinburgh, (available at: <http://www.readyscotland.org/media/77196/emergencypreparednessinscotland2014researchreport.pdf> retrieved 7/3/2015)
- [144] Scottish Government (2012a). Preparing Scotland: Guidance on Resilience, Edinburgh, 2012 (available at: <http://www.gov.scot/Publications/2012/03/2940/0> retrieved 7/3/2015)
- [145] Scottish Government (2012b) Warning and Informing Scotland – communicating with the public, Edinburgh (available at: <http://www.gov.scot/Publications/2012/02/4073> retrieved 7/3/2015)
- [146] Seeger, M.W., Sellnow, T.L., and Ulmer, R.R. (2003) Communication and Organisational Crisis. Westport, CT: Praeger.
- [147] Sellnow, T., and Seeger, M. (2013). Theorizing Crisis Communication. Chichester, UK: John Wiley & Sons.
- [148] Sellnow, T., Seeger, M., and Ulmer, R.R. (2002). "Chaos theory, informational needs and the North Dakota Floods", Journal of Applied Communication Research 30(3), 269-292.
- [149] Shaw, R., Takeuchi, Y., Matsuura, S. & Saito, K. (2013). Knowledge Note 5-3: Communicating Risk. Washington D.C., World Bank, Global Forum for Disaster Risk Reduction & Government of Japan.
- [150] Shrivastava, P., Mitroff, I.I., Miller, D. and Miglani, A. (1988) Understanding industrial crisis. Journal of Management Studies 25(4), 285-303.
- [151] Smillie, L., & Blisset, A. (2010). 'A model for developing risk communication strategy', Journal of Risk Research, 13(1), 115-134.
- [152] Socher, M. (2013). Flood Risk Management and Risk Government: Aspects of risk Management under Pressure, Saxony Ministry of the Environment presentation to OECD Expert Meeting on Risk Prevention and Mitigation, September 2013 (available at: [www.oecd.org/gov/risk/governingeffectivepreventionandmitigationofdisruptiveshocks.htm](http://www.oecd.org/gov/risk/governingeffectivepreventionandmitigationofdisruptiveshocks.htm) retrieved 22/3/2015)
- [153] Special Eurobarometer 328 – Civil Protection, Fieldwork Sept-Oct 2009, (available at: [http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_328\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_328_en.pdf) retrieved 10/1/2015)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience				Page:	72 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status: Final



- [154] Special Eurobarometer 409 – Climate Change, Fieldwork Oct-Nov 2013, (available at: [http://ec.europa.eu/clima/citizens/support/docs/report\\_2014\\_en.pdf](http://ec.europa.eu/clima/citizens/support/docs/report_2014_en.pdf) retrieved 10/1/2015)
- [155] Spence, P. R., A. Lachlan and D. R. Griffin, (2007). “Crisis Communications, Race, and Natural Disasters”. *Journal of Black Studies* 37 (4),539-554.
- [156] Stubbe, H, et al (2012). ‘Hello?!’ – About Crisis Communication and Citizen Preparedness, TNO, The Hague.
- [157] Sturges, D.L. (1994) Communicating through crisis: a strategy for organisational survival management. *Communication Quarterly* 7(3), 297-316.
- [158] Sullivan, H. (2014). ‘Case study on the use of social media: Hurricane Sandy’, Report as part of Public Empowerment Policies for Crisis Management FP7 Research Project, Grant 284927 (available at: [www.crisiscommunication.fi](http://www.crisiscommunication.fi) retrieved 24/3/2015)
- [159] Swedish Energy Agency (2008). Storm Per - Lessons for a more secure energy supply after the second severe storm in the 21st century, (available at: <https://energimyndigheten.a-w2m.se/Home.mvc?ResourceId=2358> retrieved 21/3/2015)
- [160] Tanset, J. and Rayner, S. (2009) Cultural theory and risk. In R.L.Heath and D.H.O’Hair (Eds.) *Handbook of Risk and Crisis Communication* (pp.53-79). New York, NY: Routledge.
- [161] Taylor, M., and Perry, D.C. (2005). “Diffusion of traditional and new media tactics in crisis communication”, *Public Relation Review* 31, 209-217.
- [162] Town of Garner (2012). Strategic and crisis communication plan, (available at [www.garnernc.gov](http://www.garnernc.gov) retrieved 24/3/2015)
- [163] Tseng, C. & Penning-Roswell, E.C. (2012). “Micro-political and related barriers to stakeholder engagement in flood risk management”, *The Geographical Journal*, 178(3), 253–269
- [164] Turner, B.M. (1976) The organisational and inter-organisational development of disasters. *Administrative Science Quarterly* 21(3), 378-397.
- [165] UK Cabinet Office (2007). Communicating Risk, Civil Contingencies Secretariat (available at: [www.gov.uk/government/publications/communicating-risk-guidance](http://www.gov.uk/government/publications/communicating-risk-guidance) retrieved 10/7/2015)
- [166] UK Cabinet Office (2014), Mobile Alerting Trials: Project Report, London, Civil Contingencies Secretariat.
- [167] UK Department of Health, (2012), UK Pandemic Influenza Communications Strategy 2012, London, DoH (available at: [www.gov.uk/government/publications/communications-strategy-for-uk-flu-pandemics](http://www.gov.uk/government/publications/communications-strategy-for-uk-flu-pandemics) retrieved 21/3/2015)
- [168] UK Natural Hazards Partnership (2015), Information Notes, (available at: [www.metoffice.gov.uk/nhp/science-notes](http://www.metoffice.gov.uk/nhp/science-notes) retrieved 20/2/2015)
- [169] UNESCO, IOC.,(2010), Where the First Wave Arrives in Minutes: Indonesian Lessons on Surviving Tsunamis Near Their Sources. Paris, IOC Brochure 2010-4.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	73 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- [170] UNISDR (2015), Global Assessment of Risk 2015: Annex IV Future Challenges of Disaster Risk Management, Geneva, Geneva, UNISDR.
- [171] UNISDR, Building Resilience to Disasters in Europe – UNISDR Europe Annual Report 2013. Geneva, UNISDR.
- [172] United States Centres for Disease Control and Prevention (CDC) (2014), Crisis and Emergency Risk Communication, Atlanta (available at: [www.cdc.gov](http://www.cdc.gov) retrieved 12/12/2014)
- [173] United States National Academies, Committee on Public Response to Alerts and Warnings on Mobile Devices (2011) Current Knowledge and Research Gaps. Public Response to Alerts and Warnings on Mobile Devices: Summary of a Workshop on Current Knowledge and Research Gaps, Washington D.C., National Academies Press.
- [174] Vanderford, M.L., Nastoff, T., Telfer, J.L., and Bonzo, S.E. (2007) 'Emergency Communication Challenges in Response to Hurricane Katrina: Lessons from the Centers for Disease Control and Prevention' in Journal of Applied Communication Research, 35(1) : 9-25.
- [175] Vari, A. (2002). 'Public involvement in flood risk management in Hungary', Journal of Risk Research. 5(1), 211-224.
- [176] Veil, S.R., Buehner, T. & Palenchar, M.J. (2011). A work-in-process literature review: incorporating social media in risk and crisis communication. Journal of Contingencies and Crisis Management 19(2), 110-122.
- [177] Vihalemm, T., Kiisel, M. & Harro-Loit, H. (2012). "Citizens' Response Patterns to Warning Messages". Journal of Contingencies and Crisis Management 20 (1), 13-25.
- [178] Virtual Social Media Working Group and DHS First Responders Group (2013). Lessons Learned: Social Media and Hurricane Sandy. (available at: <http://www.firstresponder.gov/Pages/Social-Media-Study.aspx> retrieved 24/3/2015)
- [179] Vos, M. et al (2014). Public Empowerment – Guidelines for engaging the public in crisis management, outcome of the PEP FP7 project, Grant 284927, (available at: [www.crisiscommunication.fi/pep/](http://www.crisiscommunication.fi/pep/) retrieved 10/1/2015).
- [180] Vos, M., & Sullivan, H. (eds.) (2014). Human Technology – Special Edition on Community Resilience in Crises: Technology and Social Media Enablers. 10(2), 95-124.
- [181] Vos, M., Lund, R., Reich, Z., & Harro-Loit, H., (2011), Developing a Crisis Communications Scorecard, Jyväskylä Studies in Humanities, University of Jyväskylä.
- [182] Waters, E.A. (2008). 'Feeling good, feeling bad, and feeling at-risk: A review of incidental affect's influence on likelihood estimates of health hazards and life events'. Journal of Risk Research. 11, (5), 569–95.
- [183] Weick, K.E. (1993) The Collapse of Sensemaking in Organisation: The Mann Gluch disaster. Administrative Science Quarterly 38(4): 628-652.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience				Page:	74 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status: Final

- [184] Wendling, C., Radisch, J & Jacobzone, S. (2013). 'The use of social media in risk and crisis communication', OECD Working Papers on Public Governance, No. 25, OECD Publishing.
- [185] White, G.F. (1945), Human Adjustment to Floods. Department of Geography Research Paper no. 29. Chicago: The University of Chicago.
- [186] WMO (World Meteorological Organisation)(2010) Guidelines on Early Warning Systems and application of Nowcasting and Warning Operations, TD No: 1559 [Online] Available at: <https://www.wmo.int/pages/prog/amp/pwsp/documents/PWS-21.pdf> (Accessed October 2015).
- [187] Woo, G. (2012). Review of social science studies on the behavioural response of populations to hazard warnings, D6.2, Reakt FP7 projects, Grant No. 282862 (available at: [www.reaktproject.eu](http://www.reaktproject.eu) retrieved 24/3/2015)
- [188] World Bank Institute (2013). Learning from Megadisasters: Knowledge Note 5-3, Risk Communication, Washington D.C., World Bank Institute.
- [189] World Economic Forum (2014). Global Risks 2014, W.E.F. (available at: <http://reports.weforum.org/global-risks-2014/> retrieved 21/3/2015)
- [190] World Health Organisation (2012). Guidelines for Mainstreaming the Needs of Older Persons in Disaster Situations in the Caribbean Washington D.C., WHO
- [191] World Health Organisation (2005). Effective Media Communication during Public Health Emergencies: A WHO Field Guide Geneva, WHO.
- [192] World Meteorological Organisation (2012). Guidelines on Strategies for use of Social Media by National Meteorological and Hydrological Services, Geneva, WMO.
- [193] Zimmerman, R., Restrepo, C.E., Culpen, A., Remington, W.E., Kling, A., Portelli, I., & Foltin, G.L. (2010). 'Risk communication for catastrophic events: results from focus groups', Journal of Risk Communication, 13(7), 913-935.
- [194] Zurich Re., (2014), Risk Nexus – Central European Floods 2013: a retrospective, (available at: [retrieved 30/10/2014](#))
- [195] Schwarz, A., Seeger, M.W. & Auer, C., (2016) The Handbook of International Crisis Communication Research, Blackwell (Kindle edition)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	75 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Annex 1: Methodology & Sources for Review

As outlined in the review, an overriding objective has been to find a way of helping to bridge the theory to practice gap through being accessible to a broad range of end-user personnel. This is a summary review of the current state of research and practice in the field which draws on eight types of sources. Where possible the opportunity is taken to refer to but not repeat more comprehensive work.

### INTERVIEWS WITH PERSONS IN CRISIS MANAGEMENT CONCERNING COMMUNICATIONS PRACTICES AND ATTITUDES.

Contact was made with 70 persons working in communications roles in civil protection in the period July 2014 to January 2015 seeking their participation in a structured interview about their communications practices and attitudes. 21 persons agreed to participate. 16 were in European organisations and 5 from international organisations. This table summarises their roles:

<i>Number of Interviews</i>	General Role	Communications Role
National level crisis management	4	5
Regional level crisis management	5	2
International	3	2

Table 6: End-user interviews conducted for review

The interviews were conducted in English save in one case where there was some translation assistance. Each interview was conducted on the basis of a pre-agreed agenda, an informed consent and agreement to anonymity (where any information directly attributable to an individual has been used in this review separate approval has been obtained for its use). Interviews followed the following structure:

- Current communications strategies
- Research on the effectiveness of particular communication strategies and messages
- Attitude to ongoing public surveys on resilience
- Research/strategies targeted on hard-to-reach groups.
- Message materials considered SOTA
- Cooperate with other organisations in communications
- Mapping of key stakeholders?
- Most important knowledge gaps in relation to communication planning
- case studies relevant to the DRIVER scenarios
- Ongoing interaction with the media

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	76 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

Two interviews involved site visits to national crisis coordination centres and one to a regional crisis coordination centre. These visits lasted 2-3 hours each.

The remaining 18 interviews were conducted by telephone and lasted 35-70 minutes.

While these interviews and visits were not envisaged in the initial Description of Work, they were undertaken as part of the decision to try to ensure that DRIVER outputs would be as relevant and accessible as possible to end-users.

#### REVIEW OF RELEVANT RESEARCH CONTAINED IN ACADEMIC JOURNALS COVERING EMERGENCY AND DISASTER STUDIES, RISK STUDIES, COMMUNICATIONS AND PUBLIC RELATIONS

Using academic databases Jstor, ProQuest, and Web of Science, these sources were searched for material relating to crisis communication, risk communication, emergency communication and resilience communication. In addition, further specific searches were made concerning more specific subject areas addressed in the 5 underpinning concepts and 13 actioning principles identified in Chapters 2, 3 and 4. In addition, the output of a number of recent systematic literature reviews was used [46a, 180, 181]

#### COMMUNICATIONS-RELATED PARTS OF RECENT AND ONGOING EU FUNDED PROJECTS.

The Cordis research database of the European Commission was searched In October 2014 for projects relevant to crisis communication, risk communication, emergency communication and resilience. 29 projects were found to be of some relevance and 17 to contain significant findings for this area. Published deliverables up to June 2015 were considered. In addition, a number of early draft deliverables of the DRIVER project have been used.

#### PUBLISHED DOCUMENTS AND STRATEGIES IN 10 EU COUNTRIES

10 countries were selected to allow for a more focused and achievable review of current practices. These were selected to reflect a range of governance types and geographies within the member states of the European Union (BE, CZ, DE, DK, EE, FI, IE, PL, SE, UK). Where available, English language versions were consulted. In other cases basic translations were considered. The persons approached for the interviews mentioned above were all from these countries save where international bodies were approached.

#### RELEVANT MATERIALS IN THE COUNTRY REVIEWS OF UNISDR, THE ANVIL FP7 PROJECT, DG ECHO AND DRIVER SP8

These sources involve a dispersed and not uniform treatment of communications issues relevant to civil society resilience. In some cases errors were found concerning reported communications practices. It is intended to prepare a separate report allowing for quantifiable comparisons in communications practices across EU member states. Information was being through the country reviews being undertaken by DRIVER's Sub-Project 8.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	77 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

#### PUBLISHED CASE STUDIES, REVIEWS AND MAJOR DISASTER REPORTS

These have related primarily to material relevant to DRIVER major experiment scenarios. These will be used to provide a reference guide for use in the development and implementation of the Joint Experiments and Final Demonstration. In addition they are being used as part of a communications training experiment (EXPE350.2).

#### PUBLIC-FOCUSED COMMUNICATIONS MATERIAL (INCL. APPS, PRINT, WEBSITES)

This review focused on the 10 EU states mentioned above, together with major international organisations.

#### STANDARDS RELEVANT TO CRISIS MANAGEMENT PUBLISHED BY STANDARDS ORGANISATIONS

During the course of the research the issue of standardisation emerged as an important point to be considered. It is essential that core skills and principles be defined if there is to be greater cooperation across international boundaries and if organisations are to adopt a strategic approach to communicating with the public during all phases of the crisis management cycle. This area will be developed in the context of DRIVER's standardisation agenda.

#### ***Language considerations***

It is understood that limitations arise from the primary, though not exclusive, reliance on research and strategies which are available in English. The principal approach to addressing this has been through the interviews mentioned above and the translation of relevant sections in relevant public documents. In addition, the research base in Europe is now wide enough that much work in English draws upon a diversity of national sources.

#### ***End-User Reviews***

This review has consciously been prepared for use by end-users in the crisis management field. In addition to review by end-users within the DRIVER consortium an additional step was adopted. In December 2015 the underpinning concepts and actioning principles were used as part of a communications training experiment with national-level communicators and policy-makers in the field of civil society resilience. This feedback was used to revise language and content as well as to assess the usefulness of the adopted approach.

***A full report on this training experiment (EXPE350.2) will be published in 2017, however, in summary, 2 groups of senior personnel found the approach to be useful and would recommend it to others.*** The 26 persons involved all hold national-level responsibilities including national crisis coordination, strategic planning, weather and flood monitoring and warning, police, army, transport, maritime emergencies, the impact of emergencies on schools, energy supply disruption, emergency social supports, health service emergency planning and geological hazards.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	78 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Annex 2: Key Ongoing Developments in Communications Practice

The core focus of this review has been to define the concepts and actioning principles for effective communication practice in support of civil society resilience and then to broadly assess the acceptance of these in Europe. Specific practice development and technologies have only been addressed where they illustrate points relating to the concepts and actioning principles.

The overall finding is that this is a period of significant innovation and development in the practice of communication for civil society resilience. In this appendix we briefly address a number of the most important of these developments.

### Social Media

No area is receiving as much attention as the role of social media. Social media is already playing a substantial part in practice, particularly in response efforts. The large and growing body of research in this area is too broad to address here. The guidelines referenced at the end of this section contain substantial detail and are shaping this evolving area.

#### Social Media is already a developed factor in disaster-related communications

Internationally, it played an important role in major disasters such as Hurricane Sandy in 2012, the Great East Japan Earthquake in 2011 and the 2010 Haiti Earthquake. In Europe the 2013 floods represented its first impact in a major disaster. Disasters and accidents are actually now the second most popular Twitter topic after sports [113].

A recent meta-study of research on social media found the majority of findings to be positive towards its role. It also showed that the overwhelming focus at this time is on social media and the response phase [179].

During the 2011 GEJE it was found that phone-based internet was the most accessible means of communications in affected regions. The number of Twitter users in Japan increased from 5.6 million to 9.6 million. However, it has also been found that radio, television and newspapers retained a central role in providing information [94, 95, 122].

A particular area of interest for organisations is the ability of social media to assist in rapid alerting. A non-European example which has been noted relates to Indonesia in 2012 where 4 million people were reached with a warning message within 15 minutes of a danger being identified [22].

#### Social Media is not the answer, but part of an evolving all-channels approach

Social media is not a replacement for other forms of communication. Traditional media remain the preferred way of receiving risk and crisis information [57, 153]. In the Netherlands, one of the few

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	79 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



countries to measure this area on a regular basis, people will turn first to online sources when seeking information but they trust radio and television sources more [103].

Social media is already established as a subsidiary method for calling for help, adding a new, more complex, element to this element of communication.

The ‘citizen as sensor’ idea is already being embraced in limited circumstances but it is likely that many European countries will soon have the capacity to crowd-source situational awareness.

An unappreciated side effect of this is the phenomenon of individuals ‘running towards the problem’ or ignoring advice in order to obtain pictures.

**Social Media has potential to aid achieving communications goals outside of the response phase.**

While a substantial focus has been on the role of Social Media tools to aid emergency and disaster response there is potential to aid preparedness and other DRR communications objectives. A growing list of social media tools is available for assisting this work [75, 72].

**Guidelines for the use of Social Media are important to release its potential.**

The adoption of social media particularly during emergency response is distinguished by both diversity and creativity [12]. It can play a role in building trust in responding organisations and it can also empower responders at all levels to be more effective. To unleash this potential there is a need for more demonstrations of best practice and the adoption of strategies and guidelines.

In addition, the fact that this is a new and rapidly evolving area means that fixed implementation practices are unlikely to be relevant over a lengthy period. This places an increased emphasis on working to underpinning concepts and actioning principles which remain more fixed over time and can shape implementation.

These guidelines are now being produced and where they do not exist there is intention to develop them [145, 75, 3, 72, 132]. An accessible guide developed in a pan-European context is that of the Cosmic FP7 project produced in 2014 [71].

## Mobile Applications

Smartphones now account for roughly two-thirds of mobile phones in use in Europe – the highest figure for any region internationally. Three-quarters of Europeans use the internet – also the highest figure internationally.<sup>21</sup> As a result of this mobile platform represent a very significant potential for the provision of rapid, personalised and comprehensive resilience information. As a charged phone will operate for some time after a power outage this also represents a way for addressing a common reason for communications difficulties during disasters.

Different work strands of DRIVER are evaluating the potential role of specific mobile applications. This will involve assessing applications for effectiveness as alerting tools and effective messaging. As a result, here we are briefly pointing to some of the models for dedicated applications currently in use.

<sup>21</sup> [www.itu.int](http://www.itu.int)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	80 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

In the United States FEMA and the American Red Cross have developed mobile apps which cover areas from advice on family preparedness checklists to real-time maps and evacuation instructions. In Australia a number of states have developed comprehensive apps for the common and fast-moving problem of bushfires. The state of Victoria's "Fire Ready" app (Figure 7) allows for location-specific warnings which include recommended actions and real-time updates on the progress of the response.

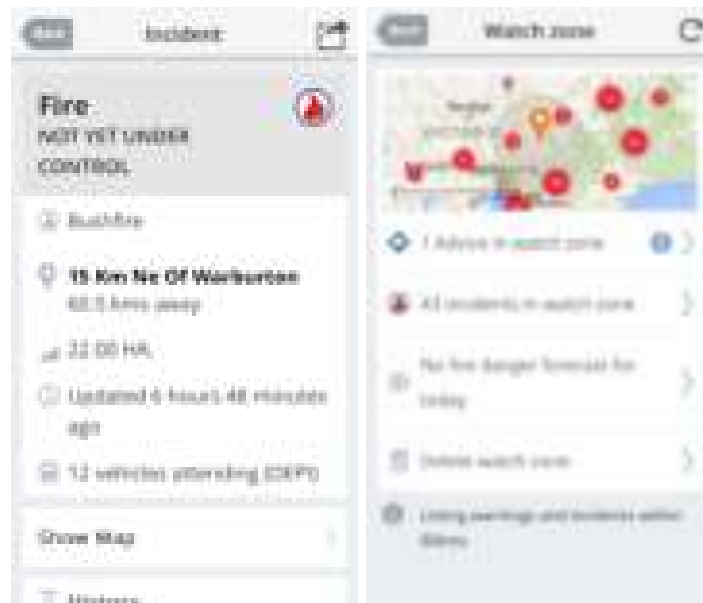


Figure 7: 'Fire Ready' Mobile App State of Victoria, Australia

In general, apps are less comprehensive in Europe and often fail to deal with diverse languages, however there are a growing number of examples of comprehensive apps.

The Scottish Government and its agencies have prepared the 'Ready Scot' mobile app (Figure 8). This contains localised contact information, preparedness checklists, advice on responding to particular crises and links to signing up for social media information and alerts.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	81 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



Figure 8: 'Ready Scot' Mobile App

The mobile application of France Meteo (Figure 9) brings together a range of warnings including weather air and transport-related. Each is localised to Department level.



Figure 9: 'Alertes Citoyen' Mobile App

What is not yet clear is the potential reach of mobile applications versus information provided through other more general sites and applications.

With many people having phones with limited battery and storage capacity, adding new applications is not automatic. Similarly, the provision of information through websites and applications which are more regularly consulted may be a more effective way of reaching people. Met offices, for example,

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	82 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

regularly provide ‘widgets’ which can be embedded by news sites and others and can serve a warning and informing function.

The development of stand-alone applications may serve to divert significant efforts and resources versus a policy of seeking to distribute information through other channels. This is an issue which can only be answered through significant research of target populations. Research with students, a population segment with near universal smartphone ownership, for DRIVER’s D350.2 suggests that stand-alone apps may have a limited role to play in terms of communication with the general public.

## Media Relations

The of role traditional media in communicating risk and crisis information has been added to rather than replaced.

How to interact with the media and the role which the media plays in each element of resilience communication is likely to continue to be a priority area for research and practice development. The speed of modern broadcast media and the evolution of newspapers into multi-platform outlets pose direct challenges for organisations, particularly where communications training is limited.

While technology enables rapid and regular direct communication with the public it is important to remember that “the role of authorities is to provide verified information not to compete with the media” [18].

Many organisation have concentrated on trying to identify what the triggers are for media interests [100, 165, 172]. Each of these involves efforts to anticipate what the media may need and not just what may interest them. As such, it could be said that the role of the media as stakeholder is being taking more seriously.

There is a heavy reliance on the legal obligation placed on broadcasters in most countries to carry specific warning messages, however there is little evidence of a strategic approach to developing long-term engagement on resilience issues. An example of a practice which is different from this is the British Broadcasting Corporation’s (BBC) 2011 initiative ‘Connecting in a Crisis’. Through this initiative the BBC established clear guidelines for how it will fulfil its public service obligations during crises, with particular effort put into providing local contacts.<sup>22</sup>

With the move to 24-hour news and multi-platform news organisations, media relations for promoting civil society resilience will continue to evolve and requires public organisations to review their own media relations practices.

<sup>22</sup> [www.bbc.co.uk/scotland/aboutus/ciac/](http://www.bbc.co.uk/scotland/aboutus/ciac/)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	83 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Early Warning/Alerting Systems

Early warning and alerting systems remain an area of substantial research and practice development.

An early warning system can be seen as a core tool to make crisis communication more effective in order to reduce loss of life and damage caused by natural hazards and other threats, or for aiding governments to prepare for a crisis, activating plans or elevating warning levels for a crisis [10].

For a person to respond to a warning, 6 steps have been identified: 1. Hearing the warning, 2. Understanding the warning, 3. Believing the warning is credible, 4. Personalising the warning, 5. Confirming the warning is true, and 6. Taking protective action [94]. However, due to heterogeneous technical alerting systems, several organisations involved and a different situation for every addressed person, the effects of an alerting strategy are not always clear to the staff within emergency management authorities.

As discussed in DRIVER's State of the Art Review of Civil Society Resilience (D31.21), crisis response authorities have to deal with the unpredictability of their population's behaviour, which is one of the complex challenges in crisis communication. This challenge has been addressed in a number of FP7 projects, for example Alert4All. This tool allows organisations to better plan and understand the effectiveness of different communication strategies.

For weather-related and public health crises advanced systems are in place at national and international levels to provide early warnings. For the most frequent and significant type of disaster, flooding, international cooperation is now an essential part of alerting. The European Flood Awareness System ([www.efas.eu](http://www.efas.eu)) has been active since 2012 and has already demonstrated the ability to improve the speed and accuracy of public alerts during major trans-national flooding.

A full review of alerting technologies and effectiveness will be addressed in later work of the DRIVER project.

## The Role of the EU

The European Union is playing an increasingly important role in sense-making, facilitating cooperation and assisting practice development.

A consistent finding of research and after-event evaluations is how disasters are increasingly having impacts across borders even when the direct event is limited to one country. Global value chains and migration serve to expand the economic and social impact [187].

For the practice of communication within Europe it is likely that the EU will play a larger role, particularly in ensuring a consistent access to information and aiding sense-making in multi-national disasters. Within the Union's institutions there are 84 different alerting or sense-making systems. The work of joining these together is very considerable as is the task of distinguishing between detection and understanding [123]. There has already developed a significant amount of active cooperation between countries facilitated by the EU in terms of formal assistance agreements and ongoing

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	84 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

forecasting cooperation. An example of this was seen in trans-national cooperation on flood forecasting during the 2013 Central European Floods [152].

The development of a network of national Crisis Coordination Centres within the EU has marked a substantial move towards more systematic cooperation including on public information [92, 123]. The need for the EU itself to take a role in disaster coordination is understood and supported by the Union's citizens. 89% believe that the cross-border nature of disasters means that the Union needs to have a civil protection policy and 82% believe that there should be coordinated action in the Union as this is better than countries standing alone[153].

DG ECHO and its Emergency Response Coordination Centre (ERCC) are in ongoing contact with national crisis response coordinators. Working through the newly-enacted Civil Protection Mechanism a range of activities are underway to assist member states as well as Iceland, Norway and the Former Yugoslav Republic of Macedonia with developing resilience practices – including a significant programme of exercises and training. The 'Exchange of Experts' programme operated by DG ECHO facilitates the exchange of best practice, while the Disaster Risk Management Knowledge Centre aims to increase the impact of DRR research on practice.

As identified in the review of current practice, the lack of systematic evaluation or reporting is a major blockage to understanding the level, nature and impact of resilience communication in Europe. The development of benchmarking measures is an essential first step to ensuring that communications research and strategies are assisting the citizens of Europe to be more resilient in the face of the rising number and impact of major crises.

## The Role of Standards

The greater use of standards in communication for civil society resilience is required to enable increased cooperation and innovation.

Standards play an increasingly important role in ensuring inter-operability in a range of crisis management tasks. A range of international standards address civil protection issues which are important for effective communications. These include terminology, planning for mass evacuations and guidelines for exercises, public warning and message structure for the exchange of information (ISO 2230, 22315, 22398, 2232, 22351).

At European level an effort is underway to develop standardised approaches to technical tasks but also organisational interoperability and performance [44, 45].<sup>23</sup> Communications will need to be fully included in this effort given the importance of communications strategies and training in preparedness, response and recovery and the complex interaction of different organisations at local, regional, national and international levels.

A specific issue of immediate concern is the need for the use of standards in relation to message form and content. As the Opti-Alert FP7 project has said, a common protocol is required to enable the

<sup>23</sup> [ftp://ftp.cencenelec.eu/EN/News/Events/ManagingCrisis/M\\_487%20Final%20version.pdf](ftp://ftp.cencenelec.eu/EN/News/Events/ManagingCrisis/M_487%20Final%20version.pdf)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	85 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

potential for personalised, multi-channel alerting [80]. The Common Alerting Protocol (CAP) involves a message format which is both intelligible by the public and by software.<sup>24</sup> It is the accepted standard by public organisation in the United States and is used by international organisations such as the World Meteorological Organisation. In Europe it is not yet standard but its use is expanding. For example, the Deutscher Wetterdienst (DWD) uses CAP and allows open access to all CAP alerts [50]. During recent mobile alerting trials in the UK the need to consider adopting the CAP standard arose as an issue to be addressed before proceeding [166].

If Europe is to be able to make use of tools such as Google Crisis Maps which bring together large amounts of data and make them useful to both responders and the public the adoption of the CAP standard is essential.

Another approach to standardisation is the Common Operational Picture which has been addressed in the Alert4All project and is being reviewed as part of DRIVER's work on strengthened response. It is substantially based on ensuring common situational awareness amongst responders but this both draws on public communications and, in turn, helps to frame them.<sup>25</sup>

Standardisation is a specific work strand in SP9 of the DRIVER project and it is in this context that a fuller review of current and needed standards for communication for civil society resilience will be carried out.

## Message Framing in Crisis Communications

One of the most important concerns of those involved in risk and crisis communication is how to frame or word specific messages. There is no single accepted approach to this however there are well-established frameworks to guide practice.

Given the rapid development of mobile and short messaging technologies, and the critical importance of getting messages right in a fast-moving or emergency situation, developing practitioner skills in message framing has become more important than ever.

A recent comprehensive review of short warning messages has found "the odds of writing a successful-yet-brief mobile warning message from scratch during a rapid onset emergency appear slim until further research is conducted. A lack of understanding about how audiences interpret and respond to them could create possibilities for serious error, including the loss of life and property." [9].

On a general level, a range of theoretical approaches have been suggested as helping understand the best approach to messaging. These include Chaos Theory, News Framing Theory and Agenda setting theory. An accessible summary of this area can be found in Sellnow and Seeger [147].

For the specific purpose of aiding communications practitioners, message templates which are more immediately accessible have been developed using a wide body of research as a foundation. The

<sup>24</sup> [www.itu.int/rec/T-REC-X.1303-200709-I/en](http://www.itu.int/rec/T-REC-X.1303-200709-I/en)

<sup>25</sup> [www.alert4all.eu](http://www.alert4all.eu)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	86 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



basic principle is that organisations should have agreed in advance of crises how they approach messaging, as far as possible; prepare draft messages during the preparedness phase.

Template	Summary
CCO	Qualities to show: <ul style="list-style-type: none"> <li>• Compassion</li> <li>• Conviction</li> <li>• Optimism</li> </ul>
Rule of 3	Provide no more than 3 ideas, messages or points at a time
27/9/3	Limit messages, words and time to reflect reduced ability to process information under stress: <ul style="list-style-type: none"> <li>• 27 words</li> <li>• 9 seconds</li> <li>• 3 messages</li> </ul> (To be used for high stress situations)
Primacy/Recency	Provide the most important points or information first and last in any answer or statement where recipient may be in stressed situation.
IDK (I Don't Know)	Important to admit limit of knowledge: <ul style="list-style-type: none"> <li>• Repeat the question (without negatives)</li> <li>• Say "I wish I could answer" or "My ability to answer that is limited"</li> <li>• Say why you cannot answer</li> <li>• Give a follow up with a deadline</li> <li>• Bridge to what you can say</li> </ul>
Guarantee Template	Important not to overstate certainty: <ul style="list-style-type: none"> <li>• Indicate that the question is about the future</li> <li>• Indicate that the past/present predict the future</li> <li>• Bridge to known facts</li> </ul>
False Allegation Template	When responding to allegation which is known to be false: <ul style="list-style-type: none"> <li>• Repeat or paraphrase the question without repeating the negative; repeat the underlying value or change to neutral language</li> <li>• Indicate that the issue is important</li> <li>• Indicate what you have done, what you are doing to address the issue</li> </ul>
1N = 3P Template	Used when breaking bad news or stating a negative message <ul style="list-style-type: none"> <li>• one negative message or point is balanced with</li> <li>• three positive or constructive messages or points</li> </ul>

Table 7: Templates for Risk & Crisis Communication Messages (Adapted from Covello, 2002.)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	87 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

Covello [28] has brought much of this work together in the context of message templates, or rules of thumb, for public health risks and the core of this is directly applicable to a broader range of crises. Shown here as Table 7, these templates provide a structure to assist communicators seeking to use an evidence-based approach to framing messages. With the growing reach of social media and mobile messaging the ability to be concise is becoming even more important. This puts a premium on the pre-testing of message approaches for different stakeholder groups (DRIVER EXPE350.2 will validate a methodology for this).

## Best Practice Tools

During the work of the DRIVER project best practice tools concerning different aspects of communications for public resilience will be considered. In relation to the overall priority challenges of comprehensive communications planning, message framing and the integration of social media, there are tools and guidelines available which have been validated in recent research or practice.

### *Aid for Strategic Planning – The Crisis Communications Scorecard*

The most detailed statement in Europe of the research base underpinning best practice is found in the outputs of the CrisComScore FP7 project. The specific objective of the project was to identify and collate indicators of best practice in a form which could be used for both training and evaluation. In addition, an online survey of crisis communications experts from a range of public and private sector organisations was carried out. Actions before, during and after crises were addressed.

The tool which emerged can be used in three distinct ways. Firstly, it is suitable for aiding both training and the development of new strategies. Secondly, it is suitable for systematically assessing the crisis preparedness of organizations and their communications plans. Finally it can be used in the recovery phase as a means of evaluating actions taken during crises.

The tool involves 25 measures with a combined total of 60 questions. It was tested for clarity and suitability by communication experts and crisis management. It was also used in several try-outs, to conduct a preparedness audit, evaluate a crisis exercise, and to evaluate the post-crisis communication. The outcomes showed that the Scorecard can be a useful instrument for participants in the field of crisis communication.

The tool can be completed online or in a paper version. The University of Jyväskylä, Finland, which led the project, maintains a website where the tool and all supporting material can be accessed. ([www.crisiscommunication.fi/criscomscore](http://www.crisiscommunication.fi/criscomscore)).

### *Aid for Framing Effective Messages – The Tool of Message Mapping*

How to frame effective messages is a constant issue in all forms of communications but has a greater urgency in relation to risk and crisis communications. By far the most developed understanding the elements of effective messages comes from work which is based on the population of the United States.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	88 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

This places the emphasis on finding an approach to validating messages rather than identifying a list of messages. The approach of ‘message mapping’ has been adopted by a number of agencies in the United States and by some international organisations. Associated primarily with Vincent Covello, it is a systematic approach to taking information and turning it into a map of messages which can be prepared in advance. It involves 7 discreet steps including expert analysis of information needs, collation of background material and qualitative evaluation of messages [87].

Such work is relatively underdeveloped in Europe. Due to the considerable diversity of populations within the EU as a whole and individual member states there is an absolute need to validate messages within states. An example of this diversity is not just a matter of translation can be seen in the approach of Eurobarometer, which validates question wording through qualitative research to ensure that there common understanding rather than just an academically correct translation.

In EXPE350.2 the tool of message mapping will be evaluated for its accessibility as a practical aid to European authorities concerned with disasters such as the scenarios to be used in DRIVER’s major experiments.

### ***Aid for planning and using Social Media - COSMIC social media guidelines***

There are many recently published reviews of the role of social media in emergencies and crises. It is a rapidly evolving area and one where best practice will continue to evolve. Building the work of a range of other research projects such as Disaster 2.0 (disaster20.eu) the COSMIC (Contribution of Social Media in Crises) FP7 project has provided a detailed overview of the area. It has published guidelines for the use of new media by both public and private organisations before, during and after crisis. The guidelines are divided into five different categories:

1. Promotion of new media before crisis situations.
2. Communicating with citizens via new media during crises.
3. Communicating with citizens via new media after crises.
4. Using information from new media in crisis management activities.
5. Implications for the organisation of crisis management activities.

The guidelines involve accessible steps which can be taken by any organisation. The Cosmic final report will include lists of best practice tips to support the guidelines. All material is available at [www.cosmic-project.eu](http://www.cosmic-project.eu).

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	89 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Annex 3: Case Studies

### Budapest Severe Storms August 2006 & August 2007

A failure to act on warnings, followed by successful changes

#### **The Crisis**

August 20th is Constitution Day in Hungary and marked by a major fireworks display in Budapest. On August 20<sup>th</sup> 2006 crowds estimated at over 1 million people were on the streets of the city at 9pm local time to witness the start of the display.

- Five minutes later a 'supercell' thunderstorm struck involving lightening, hail, heavy rain and winds of over 120km/h.
- Five people died, hundreds were injured and there were substantial economic damages.
- The storm was not unprecedented.

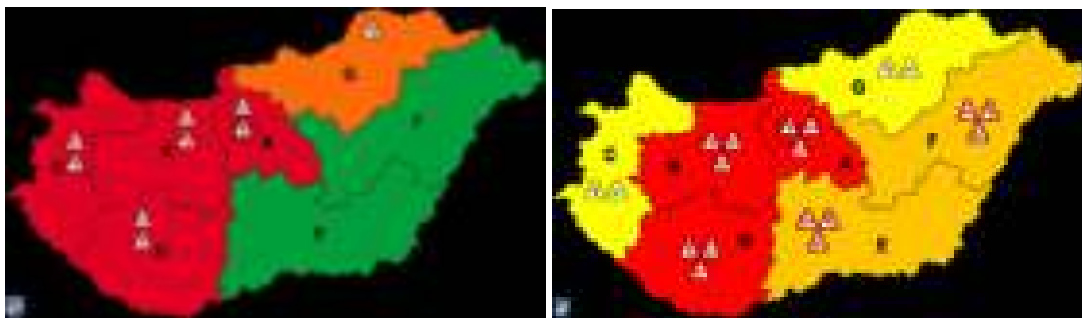


Figure 10: Weather Alert Maps 20 Aug 2006 (left) and 20 Aug 2007 (right) (source: HMS)

- The Hungarian Meteorological Service (HMS) had forecast a storm front for a number of days and had issued a red alert weather warning.
- The warning was issued on time to the government's Disaster Management Organisation and repeated.
- The information was publicly available on the website of the HMS but was not forwarded to the organisers of the Budapest event and no public action advice was issued.
- A formal inquiry was established which outlined a number of failing and recommendations for immediate changes.

#### Communications Lessons

Key failings were identified in the handling and message structuring of the communications:

- There were emergency plans in place but there was no direct link between the event organiser and the organisation responsible for the warnings which might trigger these plans.
- The civil protection service which did receive the warnings found them to be too generic, feeling 'red warnings' to be relatively common.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	90 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- The public could only access the information with effort.

As a result specific changes were immediately made:

- 'Red' warnings were limited only to the most dangerous, rarely occurring weather events.
- The HMS made available readily-accessible and understandable material on the nature and impact of specific weather events.
- The web-based alarm system was redesigned to bring the critical information up-front. (since updated with information on all weather-related hazards on [www.met.hu](http://www.met.hu) and available as a smartphone app)
- Arrangements were put in place for direct contact between organisers of major state events and the HMS to be maintained throughout the day during such events.

On August 20<sup>th</sup> 2007 a similar storm occurred, albeit slightly earlier in the day. The large number of people on the street was given regular advice through screens and loudspeakers and information was made available through the media and websites. As a result, some events were delayed or altered and there were no reports of injuries.

#### Sources:

[141] Sallai, M. (2007), 'The tragic story of the August 20<sup>th</sup> 2006 severe thunderstorm in Budapest as an example of the importance of good communication in disaster management', paper presented at the 7<sup>th</sup> EMS and 8<sup>th</sup> ECAM Annual Meetings 2007.

(<https://www.wmo.int/pages/prog/drr/events/Pula/Presentations/MHEWSHungary.pdf> retrieved 17/3/15)

[73] Horvath, A. et al (2007), 'The Constitution Day Storm in Budapest: Case Study of the August 20<sup>th</sup> 2006 severe storm', in *IDŐJÁRÁS Quarterly Journal of the Hungarian Meteorological Service*, 111(1), 2007, pp. 41–63

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	91 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Scottish Resilience Surveys

Achieving an understanding of the population to aid preparedness and response policies

### **Background**

The Scottish Government operates with substantial devolved powers within the United Kingdom. It has established a Resilience Division to oversee emergency and disaster policies and has a stated intention to raise the ongoing preparedness of the Scottish public. Extensive material has been published defining the overall approach to resilience as well as communications policies. These are broadly in line with identified best practice concepts and envisage an ongoing 2-way communication with the public.

An identified priority is to understand the state of preparedness amongst the Scottish public. In 2011 it was decided to begin public awareness campaigns on the biggest emergency threat, extreme winter weather as well as annual surveys in cooperation with the British Red Cross. Entitled 'Emergency Preparedness in Scotland' the surveys are carried out by an independent research company in face-to-face interviews with roughly 1,000 Scottish residents. The results are representative of the core regional and other demographic balances in Scotland.

### **The Surveys**

- The surveys are carried out in the period April/May, which is after most extreme weather events will have occurred.
- They involve a short and relatively straightforward set of questions which form part of a larger commercial omnibus questionnaire. It evolves slightly from year to year but the core measures are always comparable.
- There are 10 question areas plus demographics. These ask:
  - Levels of personal concern about 6 types of emergency (extreme weather, health-related, terrorism, animal health, transport, power/water/fuel supplies). These are worded in a very clear way.
  - Self-perception of preparedness for each type of emergency.
  - Potential situation of most concern (eg evacuation, loss of heating).
  - Personal experience of emergency caused by extreme weather in past 12 months.
  - Perception of where responsibility lies for ensuring personal and family preparedness (includes different public agencies).
  - Connections with neighbours to ask for help from and to help.
  - First aid skills.
  - Ability to heat home if normal method is disconnected.
  - Presence in car of list of items (eg torch, blanket, shovel).
  - Whether respondents would like to receive preparedness information and, if yes, for what type of emergency.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	92 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- As such this short survey gives directly-relevant information on a range of issues central to the development and implementation of communications before, during and after a major emergency.
- The survey reports show important regional and demographic differences in answers which indicate the need to at times communicate in different ways to different sections of the population.
- Given the methodology and the fact that the survey is carried out only once a year, minor changes are inevitable in results from year to year. Rather than becoming focused on managing headlines from each year's results, the policy appears to be to emphasise the long-term nature of the project.
- Four years of a barometer survey is not a sufficient period to draw conclusions on its impact, however there is a general belief within resilience practice in Scotland that the surveys are useful and that they are generating data which is shaping evolving communications policies.

#### Sources:

[144] Scottish Government (2012), Preparing Scotland: Guidance on Resilience, Edinburgh, 2012 (available at: <http://www.gov.scot/Publications/2012/03/2940/0> retrieved 17/3/2015)

[143] Scottish Government & British Red Cross (2014), Emergency Preparedness in Scotland 2014, Edinburgh, 2012 (available at: [www.readyscotland.org/media/77196/emergencypreparednessinscotland2014researchreport.pdf](http://www.readyscotland.org/media/77196/emergencypreparednessinscotland2014researchreport.pdf) retrieved 17/3/2015)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	93 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



## Humber (UK) Tidal Surge 2013

Communicating warnings with uncertain information and loss of national media attention.

### **Background**

The region around the Humber Estuary in Eastern England is prone to both marine and fluvial flooding. It has in place a series of advanced flood defences. In addition it has in operation the Humber Local Resilience Forum ([www.heps.gov.uk](http://www.heps.gov.uk)) which ensures that responders and stakeholders work together on resilience issues. It is a well-functioning and ambitious structure which takes preparedness issues very seriously including flood-warning preparations.



Figure 11: Bridlington Harbour 5/12/13 (source: HumberLRF)

- During early December 2013 significant flooding was predicted by the Environment Agency based on Met Office weather forecasts and tide levels, as it was anticipated that a storm surge could coincide with a spring tide. This is an unusual but not unprecedented event. A previous storm surge was experienced in 1953 which caused 307 deaths, the evacuation of 32,000 people and damages of over €1.6bn in current terms. Agencies were aware that a recurrence was possible and policies reflected this.
- A critical issue was that the timing and height of the surge was difficult to predict accurately as this was dependent on the prevailing weather conditions. This made issuing timely flood warnings for specific locations extremely difficult.
- In the days preceding December 5<sup>th</sup> the flood forecasts kept changing. By the afternoon of the 5<sup>th</sup> it was clear that there was a high level of danger but the specific locations most likely to be hit changed regularly.
- National, regional and local protocols were enacted to ensure a coordinated discussion about warning levels and appropriate actions.
- There was a large amount of national media attention until the hours immediately before the surge hit. At that stage all national broadcasters turned their primary coverage to the

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	94 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

announcement of the death of Nelson Mandela. At this point local media became the dominant part of the response communication.

- Press conferences were held and spokespeople undertook frequent interviews.
- Social media sites were well covered, and there was a dramatic spike in those accessing information on websites and Facebook. Communications personnel responded to social media queries but this put substantial pressure on them.
- The UK has a very limited number of sirens, but they are in place in specific locations where it was decided to advise evacuation. These had little impact.
- When the surge hit barriers were over-topped in various places. It was evening and there were many reports of people being caught unawares. Responding agencies reported that some people felt that they had not been aware of the possible flooding.

### ***Communications Lessons***

Overall, 1,400 properties were flooded and 18,000 people evacuated. No deaths were reported. The estimate of damages found that they amounted to roughly 1% of what would have occurred without the various flood defence measures which were in place. Particularly in comparison to the 1953 tidal surge which was of a similar scale, this shows an impressive DRR infrastructure. The communications effort was active and responsive. In various post-event evaluations the following points were made:

- Further work is required to review warning procedures at moments of high uncertainty but limited time. Some warnings were issued too late to be of use.
- A greater commitment is required to public awareness campaigns about flood warnings and action to be taken in response.
- Organisations need to plan for situations where other events limit access to broadcast media.
- The wording and communication of evacuation messages requires attention.

Each of these points fits within the best practice advised for investing in the pre-crisis period.

### ***Sources:***

Bravey, A. (2014). Tidal Surge Lessons to be Learned, presentation to the Emergency Planning College (available at: [www.epcollege.com/EPC/media/MediaLibrary/Public%20Programme/Tidal-Surge-Alan-Bravey.pdf](http://www.epcollege.com/EPC/media/MediaLibrary/Public%20Programme/Tidal-Surge-Alan-Bravey.pdf) retrieved 18/3/15)

Hull City Council, (2014). Flood Investigation Report, (available at: <https://cmis.hullcc.gov.uk/CMIS> retrieved 18/3/15)

East Riding of Yorkshire Council, (2014), Flood Investigation Report, (available at: [www.eastriding.gov.uk/public\\_reports](http://www.eastriding.gov.uk/public_reports) retrieved 18/3/15)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	95 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## 2007 UK Floods

### Need for faster alerting and stronger cooperation

#### **Background**

The summer of 2007 was one of the wettest on record in the UK. High rainfall in the months of May and June led to flooding in some areas from very high water levels in water courses as well as surface water overloading drainage systems. July saw increased pressure on these systems due to heavier rains and the fact that the ground was already saturated and could no longer help to absorb rainfall. On the July 20th two months rain fell in just fourteen hours. This flooding event was different from previous floods in scale and type as a much higher proportion of the flooding came from surface water rather than rivers. Over 55,000 homes and businesses were flooded, 140,000 homes in Gloucester lost water supplies for over a week, and several major motorways, rail lines and stations were closed due to the flooding event. Many flood defences were overwhelmed.

- Over 35,000 homes and businesses flooded from surface water for which there is no specific warning service however the warning service on rivers was largely effective. There is no flood warning service for flooding from sewers, drains, groundwater or ditches.
- 4,100 properties were not provided with warnings due to the technical limitations of flood forecasting systems. These properties were mainly along rivers which reacted quickly to the rain.
- The UK Environment Agency experienced extremely heavy demand on their services with four million visits to their website and 260,000 telephone calls.
- Radio broadcasts were the minimum standards of warning but sirens were also used which led to confusion in places. Loudhailers mounted on cars were used but in some places the planned routes were impassable.
- Only 41% of people in England and Wales who could receive warning by phone or text had signed up for this service in 2007. Only 20% of the people affected by this flooding event were signed up to receive warning by phone or text.

#### **Communication lessons**

In line with standard UK practice the 2007 floods were viewed as a major event and were subject to an independent inquiry. The subsequent report, The Pitt Report, held that the speed and accuracy of warnings was a serious concern. In addition, failings in communications within the response effort, and by extension to the public, were highlighted. The following were the principal recommendations:

- The UK Environment Agency should work more closely with the media at the very early stages of future events to ensure that they offer clear, accurate and timely information through mainstream media channels making it more accessible to everyone and preventing their own communication channels (website & phone systems) from becoming overwhelmed.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	96 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- The UK Environment Agency and Met office should work more closely together to warn and inform the public prior to and during an event.
- The Environment Agency should work with telephone companies to create an "opt-out" telephone flood warning scheme, in which at-risk people are automatically signed up, even those who are ex-directory.
- There had been a lack information available to local emergency responders (Category 1) from Category 2 responders on critical infrastructure in their area, particularly water and electricity infrastructure. It was subsequently agreed that Category 1 responders should be urgently provided with a detailed assessment of critical infrastructure in their areas to enable them to assess its vulnerability to flooding.
- Greater awareness of single points of failure in the national critical infrastructure should be communicated at and across local level and resilience assessed.
- Security clearance protocols resulted in many first responders not being provided with information from the central government.

There was a substantial reorganisation of communications planning and practice as a result of the 2007 floods. Significant efforts are in place to ensure faster alerting protocols together with a unified approach to advice. In relation to organisational cooperation there has been a shift away from a "need to know" to a "need to share" concept in the UK.

#### **Sources:**

- Environment Agency. 2007. Review of the 2007 summer floods. [Online] Environment Agency website. Available at:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/292924/geho1107bnmi-e-e.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292924/geho1107bnmi-e-e.pdf). (Accessed on 12<sup>th</sup> March 2015).
- Environment Agency. 2008. Gloucester, Why did the flood happen? [Online] Environment Agency Website. Available at: <http://www.environment-agency.gov.uk/research/library/publications/40581.aspx>. (Accessed on 10<sup>th</sup> March 2015).
- Met Office. 2015. Flooding – Summer 2007. [Online] Available at:  
<http://www.metoffice.gov.uk/about-us/who/how/case-studies/summer-2007.aspx>.  
 MetOffice Website. (Accessed on 10<sup>th</sup> March 2015).
- Pitt, M. (2008) Learned Lessons from the 2007 Floods: An Independent Review by Sir Michael Pitt, (Available from:  
[webarchive.nationalarchives.gov.uk/20100807034701/http://archive.cabinetoffice.gov.uk/pittreview/thepittreview/final\\_report.html](http://webarchive.nationalarchives.gov.uk/20100807034701/http://archive.cabinetoffice.gov.uk/pittreview/thepittreview/final_report.html) accessed 20/3/15)
- Stuart-Menteth, A., 2007. UK Summer 2007 Floods. [Online] Risk Management Solutions. Available at: [http://www.rms.com/publications/uk\\_summer\\_2007\\_floods.pdf](http://www.rms.com/publications/uk_summer_2007_floods.pdf). (Accessed 12 March 2015).

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	97 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Ice Storm Slovenia 2014

### Communication with Widespread Power Outage – International Exchange

#### *The Crisis*

- Slovenia faced devastating ice storm, starting on 31 January 2014, which enveloped most of the country in ice for a week. One in four homes was left without power, as heavy snow brought down trees and electricity lines.
- There was substantial damage to the transport and road network.
- 50% of the country's forests were damaged, accounting for half a million hectares. The trees damaged were at a level twice the annual harvest in a major national industry.
- Up to February 27<sup>th</sup> there was significant flooding as a direct aftermath of the ice storm.<sup>26</sup>
- 160 out of 212 municipalities were affected and 120,000 households (15% of the national population) lost power.
- The European Union's Solidarity Fund was activated to assist Slovenia and there was significant bi-lateral assistance from other EU member states.<sup>27</sup>



Figure 12: Ice Storm, Slovenia 2014 (source THW) 28

<sup>26</sup>[http://www.europarl.europa.eu/RegData/etudes/note/join/2014/497767/IPOL-ECON\\_NT%282014%29497767\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/note/join/2014/497767/IPOL-ECON_NT%282014%29497767_EN.pdf)

<sup>27</sup> [http://ec.europa.eu/budget/library/biblio/documents/2014/DAB/COM\\_2014\\_564\\_final\\_en.pdf](http://ec.europa.eu/budget/library/biblio/documents/2014/DAB/COM_2014_564_final_en.pdf)

<sup>28</sup>[http://www.thw.de/SharedDocs/Bilder/DE/Bilderstrecken/Mediathek/Bilderstrecken\\_Fotomaterial/Einsaetze/eisregen\\_slowenien\\_2014/eisregen\\_slowenien\\_2014.html?nn=5509412&idImage=5287918&notFirst=true#sprungmarke](http://www.thw.de/SharedDocs/Bilder/DE/Bilderstrecken/Mediathek/Bilderstrecken_Fotomaterial/Einsaetze/eisregen_slowenien_2014/eisregen_slowenien_2014.html?nn=5509412&idImage=5287918&notFirst=true#sprungmarke)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	98 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

### ***Key Communications Learnings***

- According to German Federal Agency for Technical Relief (THW) cooperation between all (international and Slovenian) supporting and emergency helper groups was perfect. It could be seen that they were prepared to get international support. Thanks to it, it was easier to organize and execute rescue arrangements.
- After the power outages a significant emphasis was placed on communicating with the public through radio and information leaflets. The leaflets were handed out in towns and distributed door to door. They contained information on the current situation and recommended “do’s and don’t’s”.
- External observers felt that the Slovenian population was clearly not expecting such a severe storm but reacted calmly to what was an unprecedented situation.
- A strength was strong social cohesion with examples of community cooperation evident.
- NGOs played a substantial role in the response including directly explaining to people what was being done to help them. For example, the Catholic charity CARITAS activated an emergency aid plan which saw volunteers and staff from 400 parishes reacting fast to directly contact victims. They were particularly important in contacting vulnerable members of the community.<sup>29</sup>
- International assistance played an important role in the response and has been one of the key actions arising from the event. Achieving effective communications within the multi-national response was difficult.<sup>30</sup> A formal Cooperation Programme for 2014-2020 was subsequently agreed between Slovenia and Austria with one of the objectives being to improve communications.<sup>31</sup>
- The EU Exchange of Experts Programme provided funding for a detailed expert exchange between Slovenia and Germany concerning learnings from this and related storms. This includes how to deal with communications following a widespread loss of power.

<sup>29</sup> <http://www.caritas.eu/news/caritas-slovenia-helps-ice-storm-affected>

<sup>30</sup> <http://www.wia.org.au/members/emcom/about/>

<sup>31</sup> [http://www.si-at.eu/images/uploads/CB\\_CP\\_SI-AT\\_2014-2020\\_Draft\\_for\\_public\\_cons\\_dec\\_2014\\_3.pdf](http://www.si-at.eu/images/uploads/CB_CP_SI-AT_2014-2020_Draft_for_public_cons_dec_2014_3.pdf)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	99 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Central European Floods 2002 & 2013 – Saxony

### Improved warning and awareness – impact of social media and online information

In 2002 and 2013 there were extensive floods throughout Central Europe. The flooding was particularly severe along the Elbe River in the Czech Republic and Germany. The lander of Saxony shows a case of a regional government making substantial progress not just in the issue of flood management, but also in improving warning and awareness policies.

### 2002

#### *The Crisis*<sup>32</sup>

- From 6<sup>th</sup> to the 8<sup>th</sup> of August there was high and intense rainfall in the headwaters of the rivers north of Salzburg and south of Prague, in particular in the catchment area of the Moldau River and then in the period from the 9<sup>th</sup> to the 13<sup>th</sup> there was extreme rainfall, especially in the Eastern Erzgebirge, Saxony, Germany.
- By August 12<sup>th</sup> disaster alarms were triggered in the Erzgebirge and in Dresden. Areas of Prague are already under water. The Bundeswehr (German Armed Forces) was ordered into the flooded areas.
- In Saxony during the following day several places were cut off from the outside world.
- Thousands of volunteers worked to save the treasures from the Semper Opera and the Zwinger in Dresden. Several hospitals were evacuated. In the district of Bitterfeld the Mulde inundated several villages.
- A second-wave of flooding hit on the 15<sup>th</sup>. Homes in Dresden and the upstream city Pirna were be vacated. In the Czech Republic parts of the chemical plant Spolana were under water causing a risk of contamination.
- From a historic peak of 9.40 meters the Elbe starts to decrease. Large parts Bitterfeld are flooded. Along the Donau, the disaster alarm is cancelled.
- On the 18<sup>th</sup> further problems arose with, for example, dam failures and potential failures requiring major evacuations.
- The following day dam failures on the middle reaches of the Elbe continued.
- The estimated cost in Germany alone of the floods reached over €11½bn.<sup>33</sup>

#### Key Communications Learnings

This was complex emergency. The threat of flooding emerged over time but novel challenges, including the breaking of dams due to extended-rainfall and pressure, emerged quickly. There was substantial agreement that communications were inadequate to the task. The core overall learning

<sup>32</sup>[http://www2.klett.de/sixcms/list.php?page=geo\\_infothek&miniinfothek=&node=Hochwasser&article=Infoblatt+Elbehochwasser+2002](http://www2.klett.de/sixcms/list.php?page=geo_infothek&miniinfothek=&node=Hochwasser&article=Infoblatt+Elbehochwasser+2002); [www.dkkv.org/DE/publications/ressource.asp?ID=70](http://www.dkkv.org/DE/publications/ressource.asp?ID=70)

<sup>33</sup>[www.dkkv.org/DE/publications/ressource.asp?ID=356](http://www.dkkv.org/DE/publications/ressource.asp?ID=356)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	100 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



point was the need for shorter communication lines and, therefore, faster alerting. Recommendations included:

- High water levels, flood warnings and forecasts to be distributed directly from the “Landeshochwasserzentrum” (State flood centre) to the community level.
  - This eliminates the interfaces between regional councils and districts, reducing the transmission time for flood information.
  - In addition to the existing legally prescribed reporting channels for flood warnings and forecasts, the forwarding of information by e-mail directly to the district offices and municipalities to be introduced.
  - In addition to sending messages about the flood the “Landeshochwasserzentrum” planned an information platform gathering all flood-related information..
  - At the same time it was planned to use the dissemination of official information via radio, television (videotext), Newspaper etc.

## 2013<sup>34,35</sup>

The 2013 floods occurred earlier in the year (18<sup>th</sup> May-4<sup>th</sup> July). An incoming flood peak from the Czech Republic was once again the principal source of the flooding.<sup>36</sup> During the entire flood event 8 States proclaimed disaster alert. At its peak 43 territorial authorities were under the status of disaster alert. In Dresden the third highest water level of all time was registered. In contrast to 2002, the state of Saxony is viewed as having responded very effectively to the flood – with the new, more-targeted and accessible approach to information being viewed favourably. The overall damage of the floods of roughly €6bn was substantially concentrated in other downriver states.<sup>37</sup>

- A significant amount of effort was placed on informing the public both about flood mitigation efforts and the availability of online flood risk information.
- The “Deutscher Wetterdienst” (German weather service) immediately forwarded all information which was gathered.
- The distribution of the warning occurred immediately to the connected authorities and in parallel via Internet, SMS, broadcasting risk messages, teletext broadcasters, intranet of the district offices, etc., Furthermore to newsletters and social media, such as Facebook, Twitter and YouTube (DWD - TV Studio).
- The internet site of the Saxony State Flood Centre saw a dramatic expansion in its use, being accessed over 700,000 times one 8-hour period at the height of the crisis.
- Beside the information from officials the communication between private persons reached an unknown height. The most important role here was played the social media (Facebook, Twitter etc.).

<sup>34</sup>[http://www.dwd.de/jb/2013/pdf/Kapitel\\_3\\_Hochwasser\\_MAI-JUNI2013\\_gesamt.pdf](http://www.dwd.de/jb/2013/pdf/Kapitel_3_Hochwasser_MAI-JUNI2013_gesamt.pdf)

<sup>35</sup>[http://www.bbk.bund.de/SharedDocs/Downloads/BBK/DE/Publikationen/Publ\\_magazin/bsmag\\_3\\_14\\_barrierefrei.pdf?\\_\\_blob=publicationFile](http://www.bbk.bund.de/SharedDocs/Downloads/BBK/DE/Publikationen/Publ_magazin/bsmag_3_14_barrierefrei.pdf?__blob=publicationFile)

<sup>36</sup>[https://www.bmi.bund.de/SharedDocs/Downloads/DE/Broschueren/2013/kabinetttbericht-fluthilfe.pdf?\\_\\_blob=publicationFile](https://www.bmi.bund.de/SharedDocs/Downloads/DE/Broschueren/2013/kabinetttbericht-fluthilfe.pdf?__blob=publicationFile)

<sup>37</sup>[www.dkkv.org/DE/publications/ressource.asp?ID=356](http://www.dkkv.org/DE/publications/ressource.asp?ID=356)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	101 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- \_\_\_\_\_



Socher, M., (2013), Flood Risk Management and Risk Government: Aspects of risk Management under

Zurich Re., (2014), Risk Nexus – Central European Floods 2013: a retrospective, (available at: <http://knowledge.zurich.com/flood-resilience/risk-nexus-central-european-floods-2013-a-retrospective/> retrieved 30/10/14)

Document name:	<b>D35.1 - Best Practice In Communication for Civil Society Resilience</b>					Page:	<b>102 of 118</b>
Reference:	<b>D35.1</b>	Dissemination:	<b>PU</b>	Version:	<b>3.0</b>	Status:	<b>Final</b>

## Hurricane Sandy (New York) 2012

### Complex disaster in a major metropolitan setting

#### Background

Superstorm Sandy' hit the New York/New Jersey region of the United States' Eastern seaboard on the 29<sup>th</sup> of October 2012. There was significant advance warning of the hurricane and of the fact that it would have a force well beyond recent experience. Sandy caused the deaths of forty-three people and caused tens of thousands of others to be injured or displaced from their homes. Given the scale of the population in the affected regions, this was viewed as lower than might have been expected.

New York City undertook extensive evaluation work on all parts of the preparation for, response to and recovery from Sandy. Within this, a wide series of communications learnings were identified.

#### Communications Response

- Sandy marked a shift in the use of social media in disasters (DHS 2013:6). More than ever before, government agencies turned to mobile and online technologies to communicate with response partners and the public in order to share information, maintain situation awareness of community actions and needs, and more.
- Members of the public also turned to social media to hold public authorities to account, request assistance, participate in response activities, show solidarity and much more.
- Public authorities used social media to maximum effect without neglecting other channels of communication. Information was pushed out via major television networks, radio channels, ethnic and community based press outlets, websites, YouTube, smart phone apps, paper flyers, telephone landlines (to subscribers to Notify NYC) and text messages. NYC Housing Authority knocked on residents' doors to spread the evacuation message and worked with the NY Police Department to make announcements with bullhorns from marked vehicles with flashing lights.
- The Mayor's office issued frequent updates on the storm's progress and sent text press releases to their distribution lists that include more than 100 ethnic and community-based press outlets—ranging from Russian newspapers to Chinese television stations to Spanish-language radio.
- To reach the deaf and hard of hearing community, sign language interpreters signed all live press conferences.
- NYCHA employees knocked on 3,436 doors of residents who are mobility impaired or who require life-sustaining equipment as well as the doors of 7,680 seniors in Zone A during the weekend preceding the storm and posted flyers in multiple languages.
- Despite the array of channels and messages, many residents of Zone A chose not to leave their homes.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	103 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Key Communications Learnings

- Social media use contributed to levels of public trust in responders when it was used to increase accountability and transparency. Using digital media, responders published details of their activities over the initial days of the storm so that they were more transparent, and to reassure the public that help was being delivered.
- The fact that social media is multi-directional can increase the level to which an organization is held accountable by its public. For example the Long Beach Township Police Department (LBTPD) Facebook account became a public stage on which mutual accountability played out. Residents of Long Beach posted notes of gratitude to the Police Department, questions about evacuation, and also frustrations and criticisms of evacuation procedures implemented by LBTPD. The LBTPD monitored comments, responding to direct enquiries and providing before and after photographs of the neighbourhood in response to information requests from residents.
- A key feature of technology in crisis communications is that it opens up the act of communicating to the public; anyone can start a blog. During Hurricane Katrina so many websites and blogs sprung up that information could be dispersed and difficult to find. Social media use during Hurricane Sandy countered this problem as it made it possible for many agencies, volunteers and organizations to aggregate information and resources and publish them in one place.
- The benefits of social media to disaster communications were demonstrated during Hurricane Sandy. Equally, the limitations were apparent. Power outages affected many residents, obviously making social media irrelevant once phones lost battery power.
- The fact that many residents in Zone A chose not to evacuate underlines the importance of refining messages, as the problem is not just in reaching people but in delivering the right messages through the right channels to achieve maximum impact and positive reactions.
- There was evidence of being above predicted flood lines reducing preparations which as a result led to significant damage.

## Sources

Abramson, David M. and Irwin Redlener (2012) 'Hurricane Sandy: Lessons Learned, Again' Disaster Medicine and Public Health Preparedness 6 (4)

Department of Homeland Security Science and Technology Directorate (2013) 'The Resilient Social Network'

Deputy Mayor Linda I. Gibbs, Co-Chair Deputy Mayor Caswell F. Holloway, Co-Chair (2013) 'Hurricane Sandy After Action Report and Recommendations to Mayor Michael R. Bloomberg'

Hughes, A., St. Denis, L., Palen, L., Anderson, K. (2014) 'Online Public Communications by Police & Fire Services during the 2012 Hurricane Sandy.' ACM 2014 Conference on Human Factors in Computing Systems (CHI 2014), Toronto.

Sullivan, H, (2014)'Case study on the use of social media: Hurricane Sandy', Report as part of **Public Empowerment Policies for Crisis Management FP7 Research Project, Grant 284927**

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	104 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

The City of New York, Mayor Michael R. Bloomberg (2013) 'Plan NYC: A Stronger, More Resilient New York'

<http://www.nycedc.com/resource/stronger-more-resilient-new-york>

<https://www.popularresistance.org/homeland-security-study-praises-occupy-sandy/>

[http://www.fema.gov/media-library-data/20130726-1923-25045-7442/sandy\\_fema\\_aar.pdf](http://www.fema.gov/media-library-data/20130726-1923-25045-7442/sandy_fema_aar.pdf)

FEMA (2013) 'Hurricane Sandy FEMA After-Action Report'

Virtual Social Media Working Group and DHS First Responders Group. 2013. Lessons Learned: Social Media and Hurricane Sandy.

[http://www.nytimes.com/2012/11/11/nyregion/where-fema-fell-short-occupy-sandy-was-there.html?\\_r=0](http://www.nytimes.com/2012/11/11/nyregion/where-fema-fell-short-occupy-sandy-was-there.html?_r=0)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	105 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Great East Japan Earthquake

### A Complex Disaster with Many Communications Learnings

#### **Background**

Japan has a lengthy history of major disasters, in particular earthquakes and tsunamis. It is also a world-leader in investment in DRR. It has in place advanced warning systems, the lengths of time of which have been regularly shortened.

On March 11<sup>th</sup> 2011 a magnitude 9 earthquake shook the North East of Japan. This led to a major Tsunami which, in turn, led to other events, most importantly a level-7 nuclear meltdown at a power plant. More than 18,000 people were killed during the disaster. Two years after the disaster 300,000 people were reported as still living in temporary accommodation.

This was a highly complex cascading disaster from which there were many Lessons learnt concerning both poor and successful communications practice ranging from preparedness through to recovery.

#### **The importance of using all channels as fast as possible – and the new role of smartphones**

- Residents of Tokyo received a warning a minute before strong shaking hit the city thanks to Japan's earthquake early warning system. The country's stringent seismic building codes and early warning system prevented many deaths from the earthquake, by stopping high-speed trains and factory assembly lines. People also received texted alerts of the earthquake warning.
- Elsewhere tsunami warnings were issued but the magnitude of the waves were underestimated.
- With widespread and lengthy power outages internet accessed through smartphones became a vital communications tool. 85% of people in affected areas who tried to make contact with authorities were able to do so through this channel as opposed to 36% through emergency dialling.
- There was a dramatic spike in the numbers using Twitter and Facebook during the disaster. The numbers using Twitter rose from 5.5 million to 9.6 million. Those using Facebook rose from 2.3 million to 3.2 million.
- In addition, the Google Crisis Map and Person Finder applications had a major reach.
- In spite of this the authorities were slow to engage. It took two days before message in Japanese started being issued on Twitter and a further three days for messages in English. Facebook was not used until 12 days into the disaster.
- In analysing the progress of risk and crisis communications channels over time it was felt that what is seen is the addition of extra channels rather than the move between single dominant channels.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	106 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

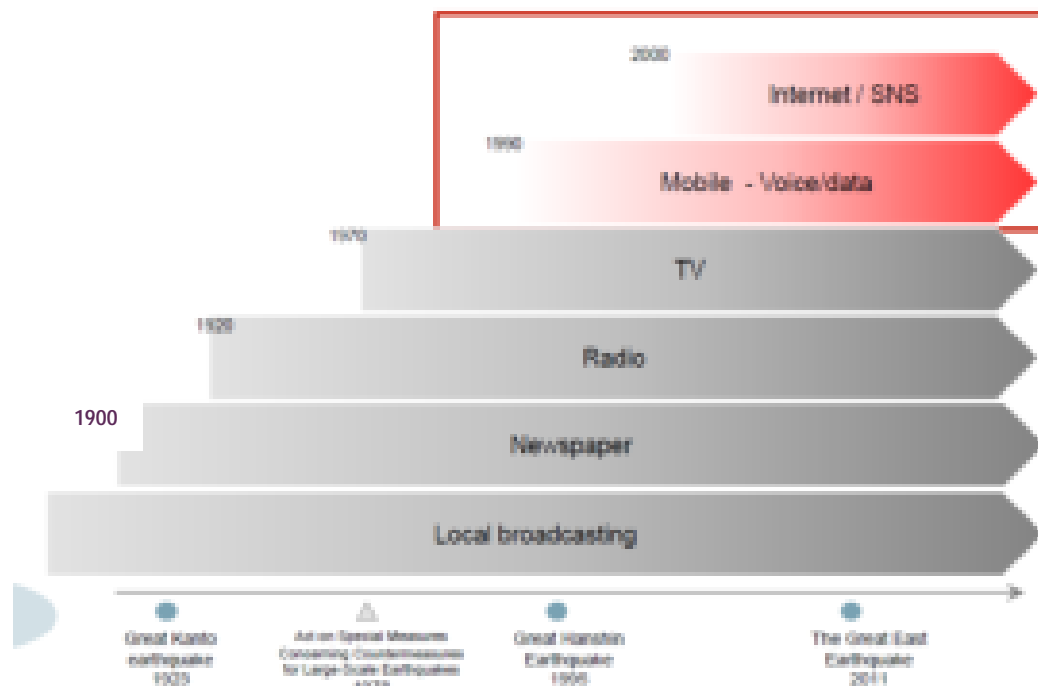


Figure 14: Risk and Crisis Communications Channels over Time (source: Office of the Prime Minister of Japan, 2012)

#### The need to cater for international and multi-lingual stakeholders

- The scale of the disaster was such that it was the leading news story throughout the world for some time. States as far away as South America experienced the impact of the tsunami and the nuclear accident caused widespread concern, especially in neighbouring countries.
- In addition, the large number of non-nationals living in and visiting Japan increased the urgency of this interest.
- The Government of Japan was not initially prepared for dealing with this interest or communicating in any language other than Japanese.
- It took 10 days before full briefings for the international press started.
- Interviews for the non-Japanese audience were for some time ad hoc and limited to officials. It took one month before the Prime Minister, who was taking personal charge of the response, held a press conference where the facility to ask questions in English was provided.
- In post-disaster reviews, the need to quickly address non-Japanese speakers and the international audience was identified as a priority. The Prime Minister's Office undertook to develop and implement protocols to address this.

#### The impact of regular and challenging education about evacuation: "the Miracle of Kamaishi"

- The City of Kamaishi, Iwate Prefecture is a coastal community of roughly 40,000 with a history of being hit by tsunamis. When the 2011 tsunami hit the city had extensive sea walls and had undertaken significant risk communication – including hazard maps and designated evacuation points.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	107 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



- In spite of these preparations 1,000 people lost their lives in the March 2011 tsunami when the sea walls were over-topped.
- A striking exception to this was the fact that of 2,900 school students in Kamaishi only 5 lost their lives. This has been called “the Miracle of Kamaishi” but was, in fact, the direct result of the preparedness education approach adopted in the city’s elementary and junior high schools.
- Professor Toshitaka Katada of Gunma University developed and implemented for the Kamaishi schools an education programme which was based primarily in teaching reactions to threatening situations rather than reliance on official maps and warnings.
- Through regular practice and discussion of hazard maps, the students were taught to take the initiative, to evacuate immediately and to assume that the situation would be worse than the worst-case scenario on the hazard maps.
- Immediately after the earthquake struck the children themselves took the initiative in evacuating their schools and running to higher ground. At their first evacuation point they decided that there was still a threat and went to a higher position again – an action which was decisive in saving their lives.

### **Sources**

World Bank Institute (2013), Learning from Megadisasters: Knowledge Note 5-3, Risk Communication, Washington D.C., World Bank Institute.

Government of Japan (2012), “The ‘miracle of Kamaishi’ : How 3,000 students survived 3/11” (online <http://mnj.gov-online.go.jp/kamaishi.html> accessed 20/3/15)

Office of the Prime Minister of Japan (2012), “Risk and Crisis Communication Opportunities and Challenges of Social Media”, Presentation to the Joint OECD/IRGC Workshop 29/6/2012, (online <http://www.irgc.org/event/social-media-workshop/> accessed 20/3/15)

Katada, T (2013), interview “Don’t trust hazard maps and don’t depend on authorities” ([http://ajw.asahi.com/article/0311disaster/analysis\\_opinion/AJ201303200038](http://ajw.asahi.com/article/0311disaster/analysis_opinion/AJ201303200038) accessed 21/3/2015)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	108 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## New South Wales Bushfires 2013

### Fast moving disaster in rural setting

#### Background

New South Wales (NSW) has a lengthy experience of dealing with widespread bushfires which threaten significant destruction. In January 2013 NSW experienced record temperatures, with some of the worst fire danger conditions ever recorded in many locations.

On January 8<sup>th</sup> there were more than 100 fires burning at any one time. A number of these fires developed quickly, spreading over great distances, destroying homes and affecting critical infrastructure. The fires however had the potential to do more damage than they did. The reason a more negative impact was averted is largely down to a combination of effective community warnings and response, reaction by volunteer brigades at firegrounds, and the early deployment of firefighters.

#### Communications Response

The New South Wales Rural Fire Service (NSW RFS) communication strategy has the key message - prepare, act, survive. The NSW RFS advises residents to make a plan, and bush fire survival plans are sent by post and available for download from their website. The NSW RFS also have a 'Fires Near Me' app, a twitter and facebook account and a live updates section on fire alerts on their website.

- In January 2013 the NSW RFS sent out information through doorknocks, used traditional warning methods including mass media and online communication, and sent more than 1 million telephone warning messages to affected communities. This happened using the Emergency Alert telephone warning system, which was introduced following the Victorian fires in 2009.
- While telephone alerts are now the preferred method of warning for many in the community, many were unable to receive messages due to a pre-existing lack of mobile phone coverage in the affected (rural) areas and this contributed to their delayed decision-making.
- The NSW RFS held community meetings to update the community on the threat of fires in the local area and how they were spreading, and to give survival tips to local residents.
- An average of four in five people in the worst affected areas used social media as a source of information during the fires. This was reflected in the NSW RFS's Facebook page more than doubling its audience within two weeks, reaching a potential 45.6 million people. At the same time, there were 24.2 million Twitter impressions delivered and 18,300 retweets of NSW RFS content.
- Residents reported that the first thing that they did when they heard about an approaching fire or saw smoke in the distance was to seek out more information.
- Research carried out on effective communication during the 2013 fires found that 13% of respondents expected to be warned personally by an emergency service agency of imminent bushfire threat. (Bushfire CRC Firenote 119: 2013).

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	109 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## Key Communications Learning

- The 2013 fire season is regarded as a renewed reminder of the importance of communication in a disaster.
- Local information was seen as being more reliable and trustworthy than radio broadcasts from national radio stations. Not only did respondents want to get their fire updates and information from people they knew and trusted, but they wanted these people to be available so they could call them. This shows the importance of 'opinion leaders' and trust, as well as the particular needs of a rural community.
- Because of the recurring nature of the threat, many residents felt they knew what to do and cited bush fire survival as something passed down from their parents and part of a collective memory. This is important to incorporate into warnings that may need to be different to the warnings that go to, for example, tourists with no prior bushfire experience.
- Research carried out by the Bushfire CRC concluded that there continues to be a mismatch between the information given and what people do before and during a bushfire.
- Findings showed that while over half of respondents reported that writing a bush fire survival plan was an important part of preparation, only 9% had done so.
- Few residents understood the implications of the different fire danger levels on their safety, and actions to take at each, apart from Catastrophic.

## Sources

<http://www.abc.net.au/news/2013-05-14/tasman-council-on-bushfires/4687658>

<http://www.theguardian.com/world/interactive/2013/may/26/firestorm-bushfire-dunalley-holmes-family>

<http://www.firefighternation.com/article/wildland-urban-interface/lessons-learned-new-south-wales-2013-fire-season>

<http://www.bushfirecrc.com/projects/5-1/effective-communication-communities-and-bushfire>

Bushfire Cooperative Research Centre (CRC) 'Community understanding and awareness of bushfire safety: October 2013 Bushfires. Part 1: Residents' Experiences in Three Areas'

[http://www.bushfirecrc.com/sites/default/files/nsw\\_rfs\\_october\\_2013\\_fires\\_report\\_part\\_1\\_final\\_version.pdf](http://www.bushfirecrc.com/sites/default/files/nsw_rfs_october_2013_fires_report_part_1_final_version.pdf)

Bushfire Cooperative Research Centre (CRC) 'Community understanding and awareness of bushfire safety: October 2013 Bushfires. Part 2 Online Survey of Residents'

[http://www.bushfirecrc.com/sites/default/files/nsw\\_rfs\\_october\\_2013\\_fires\\_report\\_part\\_1\\_final\\_version.pdf](http://www.bushfirecrc.com/sites/default/files/nsw_rfs_october_2013_fires_report_part_1_final_version.pdf)

Bushfire Cooperative Research Centre (CRC) 'How three communities reacted to bushfires'

[http://www.bushfirecrc.com/sites/default/files/managed/resource/1311\\_taskforce\\_f119\\_final\\_lowres.pdf](http://www.bushfirecrc.com/sites/default/files/managed/resource/1311_taskforce_f119_final_lowres.pdf)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	110 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## H1N1 Influenza Pandemic 2009

### Background

H1N1 influenza (swine flu) was a worldwide concern in 2009-2011. The communications dimensions of the response in the United States have been studied in considerable depth. Specific studies of European country responses are detailed in the Anvil FP7 project.

The first case of H1N1 detected in the United States was reported April 15th, 2009. Cases first appeared in California and Texas, and soon spread across the country and around the world. At the same time, an outbreak of H1N1 influenza was occurring in Mexico. By the end of the month it was clear that this novel strain of influenza had crossed hosts from swine to humans and appeared to be capable of human-to-human transmission. In June 2009 the WHO declared the H1N1 influenza pandemic.

### Communications Response

- Communications from the outset were fundamentally shaped by the fact that there were so many unknowns.
- The Center for Disease Control (CDC) aimed to ‘Be First, Be Right, Be Credible’ but found it a challenge as they were working with incomplete information: in particular, data on the severity of the virus were changing rapidly. When the virus spread, would it kill tens — or millions?
- At the start of the outbreak the CDC took steps that some criticised as being extreme, for example closing schools for 2 weeks if one student was diagnosed with flu.
- Over the next week, as it became apparent the flu was milder than expected, the recommendations were revised, and local health officials struggled to keep up with what they should do.
- Information was disseminated through a wide variety of channels- flyers, news media, social media and the flu.gov website was regularly updated.
- In addition, the CDC worked with key religious leaders to reach populations in minority areas, and with the Mexican embassy to develop Spanish language flyers to address the concerns of undocumented workers.
- The key “wash your hands, cough in your elbow, stay home if sick” flu prevention messages were thought to be enormously effective in raising awareness about the importance of hand washing in preventing the spread of germs.
- However some of the measures, such as staying home from work if sick and closing schools didn’t take into account the economic reality that many can’t afford to take time off work.
- The CDC encouraged people to get the vaccine and teamed up with Google on an app for vaccine clinic locators.
- At the same time, there was a limited supply of the vaccine so many who wanted to get it couldn’t. This dented public trust in the agency.
- The uptake of the vaccine was considered low, and reflected low levels of trust in the authorities.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	111 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- Anti-vaccination groups gained traction and prominent spokespeople throughout the pandemic.

### Key Communications Learning

- The rates of vaccination among racial and ethnic minorities were lower than for the rest of the population. The Department of Health report cited the messages and channels used as being partly responsible for this.
- Several studies reported public distrust in different actors of the pandemic crisis, in particular governments, the media, pharmaceutical industries, and international and national health authorities. This had clear consequences in the challenge of bringing about behavioural changes in the population.
- The speed at which information changed was a challenge and showed that it can be difficult to be transparent.
- As Mexican migrants to the US were blamed for the virus in some quarters of the media, they then were less likely to seek healthcare.
- H1N1 sparked not only a global outbreak of disease but also a rapid increase in global communication activities by governments, journalists, scientists, commercial entities and citizens themselves using traditional media as well as new online platforms. Some commentators conclude that this was the first pandemic to be characterized by such a sharing of information, and debate. There were huge levels of public debate and dissent, communication and metacommunication.
- The communications during the H1N1 pandemic pointed to a climate of media scepticism that should be factored into communication strategies.

### Sources

Barrelet et al. (2013) Unresolved issues in risk communication research: the case of the H1N1 pandemic (2009–2011). *Influenza and Other Respiratory Viruses* 7(Suppl. 2), 114–119.

<http://www.cdc.gov/h1n1flu/cdcresponse.htm>

<http://ncdp.columbia.edu/library/video-media-items/?video-media-terms=41>

National Collaborating Centre for Infectious Diseases (2012) 'Communication Strategies for the 2009 Influenza A (H1N1) Pandemic'

[https://cdn.metricmarketing.ca/www.nccid.ca/files/Evidence\\_Reviews/H1N1\\_5\\_final.pdf](https://cdn.metricmarketing.ca/www.nccid.ca/files/Evidence_Reviews/H1N1_5_final.pdf)

Holmes, Bev J., Natalie Henrich, Sara Hancock & Valia Lestou (2009) 'Communicating with the public during health crises: experts' experiences and opinions', *Journal of Risk Research*, 12:6

Maher, Brendan (2010) 'Crisis Communicator' *Nature* 463.

[http://www.nature.com/news/2010/100113/full/463150a.html?s=news\\_rss](http://www.nature.com/news/2010/100113/full/463150a.html?s=news_rss)

An HHS Retrospective on the 2009 H1N1 Influenza Pandemic to Advance All Hazards Preparedness

<http://www.phe.gov/Preparedness/mcm/h1n1-retrospective/Documents/h1n1-retrospective.pdf>

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	112 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- Klemm, Celine, Enny Das & Tilo Hartmann (2014): 'Swine flu and hype: a systematic review of media dramatization of the H1N1 influenza pandemic', **Journal of Risk Research**, DOI
- Miczo, Nathan, Emily Danhour, Kyle E. Lester, & Jeff Bryant (2013) 'Memorable Messages and the H1N1 Flu Virus' **Western Journal of Communication** Vol. 77, No. 5.
- RAND Research Centre (2009) 'Risk Communication in the Early Stages of the H1N1 (Swine Flu) Alert: How Effective Were State and Local Public Health Departments?'
- Singer, M. (2009) 'Pathogens Gone Wild? Medical Anthropology and the "SwineFlu" Pandemic', **Medical Anthropology: Cross-Cultural Studies in Health and Illness**. Vol. 28 (3)

Document name:	<b>D35.1 - Best Practice In Communication for Civil Society Resilience</b>					Page:	<b>113 of 118</b>
Reference:	<b>D35.1</b>	Dissemination:	<b>PU</b>	Version:	<b>3.0</b>	Status:	<b>Final</b>

## Annex 4: Risk Perception and Preparedness Levels in Europe

In Section 2 it was explained how understanding perceptions of risk are central to implementing effective communications for civil society resilience. In the review of acceptance of the 13 identified actioning principles it was stated that there is a substantial body of work available to understand current risk perceptions and preparedness levels in Europe. This Annex provides a brief summary of the available material.

There is a wide base of knowledge on risk perception and preparedness levels in Europe which needs to be added to with more regular and in-depth surveys.

In national reports on the implementations of the UN's HFA member states of the EU state that risk prone communities are, in general, well-informed about the risks they face [113]. While levels of risk communication activity are currently high, and in particular relating to flood forecasting, there is limited statistical data to back up the assertion that risk prone communities are well-informed.

For the purposes of this section pan-EU and national-level 'barometer' surveys have been considered. Particularly as a result of widespread flood-awareness programmes there is a body of other work relating to perceptions at local and regional levels.

### Pan-EU Surveys

At a pan-European level the European Commission's Eurobarometer is the world's longest established and largest multi-national survey. Through six-monthly regular reports and different issues-based reports it involves carrying out directly comparable research in each member state with the results being statistically significant at national level as well as in aggregate.

In the period of September-October 2009 27 separate national surveys on civil protection issues were carried out as part of a Special Eurobarometer. With 26,000 participants, this was the largest ever survey of risk perception and preparedness. Further surveys in 2012 and 2015 followed the same methodology reinforced some core findings but were significantly more limited in the questions they asked.<sup>38</sup>

The results show that there is considerable diversity within Europe but that a consistent factor is a public wish to receive more disaster risk and preparedness information.

<sup>38</sup> Data and information on methodology available at: [ec.europa.eu/public\\_opinion/archives/eb\\_special\\_en.htm](http://ec.europa.eu/public_opinion/archives/eb_special_en.htm)

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	114 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final



### ***Risk Perception/Awareness***

When asked what natural or man-made disasters, if any, people felt at risk from in their country weather-related events were clearly more prominent. Across countries and in the EU as a whole, the results roughly correlate with each country's experience of each type of disaster. Table 8 shows the overall results, with flooding and violent storms with gales clearly seen as greater risks, though there is a significant level of concern relating to quite a range of disasters.

	(EU27)
Flooding	45%
Violent storm with gale	40%
Industrial accident	29%
Forest fire	27%
Earthquake	22%
Water/marine pollution	20%

Table 8 SpEB 328 (2009) – 'What disasters do you feel at risk from in (this country)?'

However it is essential to understand that there is no such thing as a shared perception of risk across the EU.

There are dramatic differences between countries in terms of their perceptions of principal risks. For example, earthquakes are the most widely perceived risk in five countries but are barely or not at all perceived as a risk in 16 countries. This said, in all cases except potential volcanic eruptions, which is a perceived risk only in Italy, all countries have a similar risk perception to at least some other countries. For example, risk perceptions in Central European states are roughly similar.

In the 2015 survey (Special Eurobarometer 433) people were asked if they were aware of the risks in their region. 55% said that they were aware of the risks and 40% said that they were not aware of the risks. Responses varied significantly between countries.

### ***How informed are Europeans?***

Special Eurobarometer 328 in 2009 asked people how informed they felt about 'disaster preparedness' and 'disaster response capacity' in their countries. The results showed that 29% felt 'informed' about disaster preparedness in their country. Again there were significant variations between countries – with 4 countries having less than 20% feeling 'informed' and 4 having more than 40% feeling 'informed' [153, 154].

On the measure of feeling informed about the capacity within the country to respond to a disaster the overall figure was 34%. The differences between countries on this measure were stark, with the lowest being at 14% and the highest at 67% [153].

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	115 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

The 2015 survey approached the question in a different way by asking if people felt “enough is being done” to prepare for disasters at different levels. For each of the regional, national and European levels only a minority believed that enough was being done to prepare for disasters.

There are important demographic and national differences in these findings, but the general picture remains of a population which does not feel informed about preparedness and response capacity. This has significant implications for the practice of communication.

### ***Are Europeans Prepared?***

In 2009 people were asked whether they had personally taken actions “such as preparing a first aid kit, buying a torch, etc.” to prepare for a disaster such as flooding, forest fires or earthquake in their countries. These items were referenced as they form part of commonly recommended self-preparedness steps. Only 20% said they had taken such an action. A further 15% said they had not but planned to do so and 63% said that they had not even considered taking such preparedness steps. Only in 6 countries did over 30% say that they had taken a preparedness step.

This data is problematic in that it is not possible to break it out by area in terms of the level of technically-assessed risk or past experience of disasters. However, the results are so low that it is fair to say that Europeans do not feel fully informed and have taken few personal steps to prepare.

### ***Who Would Europeans Trust?***

Overall, Europeans most trust scientists or other experts to give them information about possible disasters.

53% say they would trust scientists and 33% say national governments. Once again the national variations are very significant, with the population of 5 countries (AT, BU, FI, PT, ES) saying they would more trust national government (full results presented in Annex IV).

Other research confirms that public-sector scientists are the most trusted (66%) to explain the impact of science and technology on society.

### ***The Role of Europe and of the Media***

Results in all three surveys confirm deep public support for the idea of mutual aid in Europe on the issue of responding to disasters.

There is a high acceptance of the role of the European Union in disaster prevention and response, with 93% supporting a common warning system which would assist travellers and non-nationals. This will be addressed further in Chapter 6 (see section 6.5).

Levels of trust in different channels of communication as well as preferred channels for receiving information concerning civil protection activity vary significantly across EU member states.

However, it remains the case that broadcast media is the favoured route for receiving public policy information.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	116 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

## National Surveys

---

Publicly available national surveys relevant to civil society resilience are not common in Europe. Where they are available they supply substantial information to assist the shaping of communications policies. The following are examples of three different types of national survey.

### Once-Off Survey - France 2013

A 2013 national survey carried out for the French Ministry of the Environment confirmed the core Eurobarometer results for France and added a number of new measures. The survey showed:

- Only 6% said they have taken any special measure to prepare for natural risks.
- A combined 37% felt 'informed' and 63% felt 'badly informed' about natural risks.
- 34% said they knew the natural risks to their commune, while 66% said they did not.
- 22% said they knew what to do if there is a national alert, 78% said they did not.
- 90% said they would like more information on what to do during a disaster.

These results are in line with the Eurobarometer picture of a population which is not actively engaged with or aware of disaster risk and preparedness.

### Broad Regular Barometer Survey - Netherlands Risk & Crisis Barometer

The Ministry of Security & Justice of the Netherlands carries out a six-monthly survey on risk perceptions and key elements underpinning crisis communications. Originally carried out by telephone, it is now an internet-based survey. The difference in results, particularly on trust levels, between the two methodologies has reinforced the importance of avoiding the over-interpretation of short-term movements and the need to maintain a series over time in order to properly understand results. The Barometer includes significant elements which are not relevant to natural disasters however it specifically explores core issues such as trust in communicators and the impact of communications.

The October 2014 [103] survey results were consistent with the picture of requiring a diverse approach to communication in order to assist preparedness and response:

- The survey asked about crises in general, showing a higher level of immediate concern relating to an economic or security-related crisis than for a natural disaster.
- Confidence and lack of confidence were roughly equal in relation to government preparations for dealing with a disaster and confidence in the information which the government might provide during a disaster.
- Between one-fifth and one-quarter of people recalled receiving information on what to do in the event of a disaster – with (in order) television, radio, the internet and 'the media' as the sources of this information.
- 76% said they would look for additional information in the event of a disaster with (in order) the internet, television and radio being the places they would seek the information. The websites of media outlets ranked as the first place they would go for information.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	117 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final

- Trust in information channels ranked radio, television and the internet in this order.
- Of interest is that 87% said they would trust the information they would receive from the radio, only 9% said the same about Twitter.

These findings allow Dutch authorities to measure the impact of their current communications work and plan more effective strategies.

#### Campaign-related surveys - Scottish National Surveys

In recent years the Scottish government and the British Red Cross have run annual surveys on resilience issues in Scotland. These are directly linked to winter-related preparedness objectives. While more limited than the Dutch Barometer, the focus of these surveys allows for practical feedback on a regional and national level about the effectiveness of policies. (These surveys are discussed in greater detail in a case study in Annex 3.

Document name:	D35.1 - Best Practice In Communication for Civil Society Resilience					Page:	118 of 118
Reference:	D35.1	Dissemination:	PU	Version:	3.0	Status:	Final