

All-Ireland Disaster
Risk Reduction

Advancing a Focused Cross-Border Approach to Public Service Messaging in Emergency Management

Research Report
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ABBREVIATIONS

B2C	Business-to-Customer
BBB	Build Back Better
CAWT	Cooperation and Working Together
CB	Cell Broadcast
CBEMG	Cross Border Emergency Management Group
CCG NI	Civil Contingencies Group Northern Ireland
CCPB	Civil Contingencies Policy Branch
CHITIN	Cross Border Healthcare Intervention Trials in Ireland Network
COP26	Conference of the Parties (26 th meeting – Glasgow 2021)
CPS	Cross Border Public Services
DEHLG	Department of Environment Housing and Local Government
DFI	Department for Infrastructure
DHLGH	Department of Housing Local Government and Heritage
DRR	Disaster Risk Reduction
EECC	European Electronic Communications Code
EENA	European Emergency Number Association
EIS	Executive Information Service
EMR	Euregio Meuse-Rhine
EMRIC	Euregio Meuse-Rhine Incident Response and Crisis Management
EPG	Emergency Preparedness Group
EPO	Emergency Planning Officer
ESPON	European Spatial Planning Observation Network
EU	European Union
FEMA	Federal Emergency Management Agency (USA)
GAA	Gaelic Athletic Association
GDPR	General Data Protection Regulation

GIS	Geographic Information Systems
GSM	Global System for Mobile Communications
HSE	Health Service Executive
ICLRD	International Centre for Local and Regional Development
IVI	Innovation Value Institute
JPND	Joint Programme Neurodegenerative Disease Research (EU)
Km	Kilometre
LA	Local Authority
LGDs	Local Government Departments
LIAC	Local Impact Assessment Call
MEM	Major Emergency Management
MUSSI	Maynooth University Social Sciences Institute
NCCB	National Crisis Centre (Belgium)
NI	Northern Ireland
NIO	Northern Ireland Office
NSMC	North South Ministerial Council
OEP	Office of Emergency Planning
OFMDFM	Office of First Minister and Deputy First Minister
PCSP	Policing and Community Safety Partnership
PIMG	Public Information and Media Group
PPN	Public Participation Network
PSNI	Police Service of Northern Ireland
RCRG	Regional Community Resilience Group
RNLI	Royal National Lifeboat Institution
SEM	Strategic Emergency Management
SMS	Short Message Service
UK	United Kingdom

FOREWORD

Understanding the role of public safety messaging during an emergency event has never been more essential, as our society grapples with emerging new technologies and the ever-evolving means of communicating. It is generally acknowledged that the public, during an emergency, will seek concise, fact-based information from a trustworthy source to enable good judgment. How this messaging is delivered will impact on the outcome of the emergency management phase.

It was the inaugural All-Island Disaster Risk Reduction Conference 2023, when the research opportunity was announced, and the potential for this research study was developed. With the support of the Cross Border Emergency Management Group (CBEMG) and its network, it was possible to link in with the International Centre for Local and Regional Development (ICLRD) at Maynooth University and, ultimately, secure a successful funding application.

In terms of Monaghan County Council's involvement and perspective, County Monaghan is in a unique geographical position as it shares the border with three Counties and four District Councils and has almost 100 of the 270 crossings with Northern Ireland. The border has a unique political, economic, and social fabric and relationships which are interwoven through shared experiences and social structures, where the importance of language and terminology influences the effectiveness of communication and how messages are delivered.

Monaghan County Council, as a member of the CBEMG, welcomed the opportunity to lead this research study and collaborate directly with our colleagues in Northern Ireland. The study afforded an opportunity to engage directly with statutory agencies and community groups on both sides of the border via focus group sessions to obtain a qualitative overview of current practice. A CBEMG workshop reinforced the commitment to securing a universal public safety messaging approach and highlighted the immediate benefits of the local community as the medium to communicate. We are also acutely aware of the importance of public safety messaging in securing a sustainable climate.

The research study brought an array of research experience and a real understanding and background knowledge of the border and its people. Collectively, the research team embraced the social, economic and environmental realities of the region and addressed public safety messaging gaps and areas to improve the resilience capacity of communities through the promotion of both local and international best practices to provide practical solutions to secure sustained strategic cooperation.

The recurring theme and overarching outcome of this research study has been cross-border collaboration, lasting relations formed, and the commitment of all involved to secure and protect the people of the region, irrespective of which side of the border they may be on.

Finally, it is important to acknowledge the support and contribution of the Department of An Taoiseach and the Department of Defence - Office of Emergency Planning, the ICLRD, CBEMG and particularly the staff of Fermanagh and Omagh District Council for their commitment to this research study, without a collegial approach this project would not of been possible.

A handwritten signature in black ink, appearing to be 'DB', written over a horizontal line.

Dermot Brannigan
Chief Fire Officer
Monaghan County Council

Recommendations¹

1. Building on the existing strength of community engagement, we recommend the adoption of a **'whole of society'** approach to emergency management at the local level, recognising the **roles of community organisations and engaged citizens as partners** in all phases of emergency management.
2. The benefits of a whole society approach, notwithstanding, public authorities must be aware of **the inherent risks that too high a burden of responsibility** may (inadvertently) rest on the shoulders of community organisations and/or a small number of engaged individuals. It is imperative that the **roles and responsibilities of both statutory bodies and community organisations are clearly defined**.
3. **Community leadership** is critical to transitioning from the incident response to the recovery phase. **Empathetic leadership** based on relations of trust can provide guidance to **communities under stress**. Public authorities should consider who can speak best on behalf of the community and in what capacity.
4. The **role of emergency services and local authorities** in public safety messaging is twofold. Firstly, they have a responsibility to **ensure that the public has the information they need** to respond to situations as they arise. Secondly, local authorities have a **responsibility to engage with their communities based on an understanding of how incidents are perceived locally** and how effective responses may be mobilised. Local authorities may require additional resourcing and training to fully realise both of these tasks.
5. Local public authorities are often required to **negotiate a challenging media landscape** in times of crisis. In some cases, **multiple narratives (both factual and non-factual) of particular incidents may compete for attention**. Where irresponsible and/or unethical journalism poses a problem, public authorities require professional guidance to develop effective responses.

¹ Please refer to Chapter 7 (page 50) of this report for further detail on recommendations, actions and lead stakeholders.

6. **Effective public safety messaging** at all levels, from local to national, must be universal. Communication channels must be established to **ensure that all groups in society are reached**. International experience indicates that **location-based SMS** at a local level can complement a **national cell broadcast system**.
7. The establishment of a **dedicated communications system** should be progressed to **provide local and regionally specific information** on current incidents and risks in accessible language.
8. Effective emergency management communication is dependent on the **ability of citizens to reliably contact the emergency services by telephone from their home or place of work**. Public investment is required to improve mobile phone network coverage in the cross-border region.
9. Local authorities should consider **producing a joint preparedness publication** (e.g. brochure/booklet) **with key contact information for emergency response agencies**. This should provide information on potential risks in the cross-border region, where relevant, referencing past events (e.g., flooding, wildfires). This publication should be distributed to community organisations.
10. Central government, local authorities and emergency services should establish guidelines to ensure **that short messages to the public contain all the relevant information in as concise** a manner as possible. It is possible to learn from international good practice in this regard. It is recommended that the CBEMG take on a coordination role in this regard to ensure **cross-border consistency**.
11. Consideration should be given on the optimum methodology for ensuring clarity when a severe weather warning is issued, with the aim of reducing the potential for confusion/complacency when weather warnings are issued in either or both jurisdictions. It is recommended that **the CBEMG should consider how this can be progressed**.
12. In the case of **prolonged incidents** (e.g. a pandemic or prolonged flood incidents), procedures should be introduced to **ensure public safety messaging in each jurisdiction is kept as consistent as possible**.
13. Public safety messaging in the preparation phase should address the **full spectrum of emergency situations, from high-probability low-impact to low-probability high-impact events** and provide targeted guidance on what to do in each situation.

14. Multi-organisational **demonstration and contingency scenario exercises** organised on a cross-border basis can be an effective means of preparing for potential cross-border incidents and demonstrating to the public that the capacity for an effective cross-border response exists and can be called upon.

Objectives of the Study

There are four key objectives to this study funded by the Department of Defence - Office of Emergency Planning under the All-Island Disaster Risk Reduction Shared Island Research on Emergency Planning Cooperation, 2023, namely:

- To build a better understanding of existing practices of local public safety messaging;
- To assess the extent of cross-border coherence in public safety and emergency management messaging;
- To draw learning from international good practice; and
- To develop recommendations for improved cross-border public safety messaging.

In the following, we provide a summary of key results and insights from the study.

Effective emergency management communication

- Clear and effective communication is essential to emergency management and disaster risk reduction. Effective and timely response to extreme events depends to a large degree on the social perception of environmental hazards and risks.
- Emergency management and public safety messaging takes place in a world characterised by the ubiquitous presence of information and communication technologies.
- The contemporary media landscape is increasingly diverse, diffuse and, in parts, disconnected from what is happening 'on the ground' in real-time. Almost instantaneous access to information does not necessarily lead to the public being better informed.
- The task of communicating key messages or warnings to the public in cases of emergency has not become easier with more advanced communication technologies. Rather, public safety messaging must compete for attention in an increasingly crowded media landscape.
- Public safety messaging concerns not only the dissemination of information but also building relationships of trust, listening to other perspectives, and conveying empathy in the face of difficult situations.
- A key challenge for public safety messaging is creating an effective link between the technical level of inter-agency communication and public engagement at the community level. Even where robust and effective warning systems are in place, public safety depends on good interpersonal and community-based relations.

Communicating Across Borders

- Cross-border regions face specific challenges in emergency management. Legislative, institutional, and policy differences in neighbouring jurisdictions mean that effective and coherent responses to emergency incidents are dependent on the depth and quality of cross-border interaction and cooperation.
- In the Irish cross-border region, the Cross-Border Emergency Management Group (CBEMG) has laid the groundwork for inter-jurisdictional cooperation at both strategic and operational levels. Achieving coherence in public safety messaging, however, remains critical to avoid distrust, confusion and complacency.
- Existing national guidance on communications in strategic emergency management in the Republic of Ireland (heretofore referred to as 'Ireland') is focused on the roles of government departments and national-level public agencies. The primary purpose of communications is understood in terms of the provision of information in the context of imminent or ongoing emergencies. The emergency communications role at a local level is understood to be different from that at a national level but has not been further specified in national-level guidance to date.
- In the case of Northern Ireland, the principle of lead government department is outlined within the Northern Ireland Civil Contingencies Framework with a co-ordination role for local government or the PSNI based on whether the scenario is deemed a major and imminent threat to life. Where there is a potential risk to life, the PSNI is tasked with the coordination of a multi-agency response.
- In the past, a lack of cross-border coherence in public safety messaging has impacted on the level of trust people have in public authorities. During the COVID-19 pandemic, differences in regulations and overarching policy narratives impacted on how key messages were perceived in the border region. A lack of consistency in weather warnings on either side of the border is perceived to lead to confusion and, at times, complacency.
- In addition to formal protocols, interpersonal relations are key to ensuring coordinated and efficient responses at both inter-agency and cross-border levels.
- Whereas networks of interpersonal contacts can provide a strong foundation for effective cross-border working, a balance must be achieved to ensure that communication is not dependent on a small number of key individuals. Lists of contacts and alternative contacts should be readily accessible to ensure that effective and coherent communication is maintained, for example, should individuals in key positions be on leave or otherwise unavailable.

- The border region faces specific challenges due to infrastructural deficits and gaps in service provision. Unreliable mobile phone network coverage can impact on the ability of residents to contact the emergency services without leaving their homes.
- Notwithstanding the high density of everyday cross-border interactions, ‘borders in the mind’ continue to persist. This phenomenon can lead to a lack of awareness of, or sense of urgency regarding, incidents occurring in close proximity, but in the other jurisdiction.

Public Safety Messaging and Community Engagement

- The UN Sendai Framework stresses the need for ‘all-of-society’ engagement and partnership based on inclusive, non-discriminatory practices and coordination across all relevant sectors and stakeholders. The Framework explicitly recognises the role of local government in disaster risk reduction, stating that local authorities and local communities must be empowered to reduce disaster risk and build resilience through the allocation of resources, incentives and decision-making responsibilities, as appropriate.
- A key challenge for public safety messaging is creating an effective link between the technical level of inter-agency communication and public engagement at the community level. Even where robust and effective warning systems are in place, public safety depends on good interpersonal and community-based relations.
- Building trust across all sections of a community is essential in the preparation phase. For this, it is important that local authorities have a good working knowledge of the full spectrum of community organisations active in their area, ideally based on interpersonal contacts.
- Maintaining momentum and active interest in local community care organisations can be challenging in a time of declining volunteer numbers.
- The ‘flip side’ of a whole of society approach to emergency management is the risk that too heavy a burden of responsibility might be placed on community organisations or a small number of engaged individuals.
- There is a need for maintaining a clear balance between formal statutory and informal community roles and responsibilities. Both community organisations and public authorities should be aware of their actual and potential roles and responsibilities in all three phases of emergency management.
- Local elected representatives can potentially also play a significant role, as a go-between or ‘ear on the ground’ establishing links ensuring key messages reach all

sections of the community. They can also provide a channel for feedback between the community and public authorities, which may be particularly relevant in the case of prolonged incidents.

- Empathetic leadership based on relations of trust can provide guidance to a community under stress. Leadership can come from senior officials, elected representatives and/or other trusted sources in the community.
- Personal experience of past events can contribute to a heightened awareness of future risks. Additionally, historical events from past centuries can become engrained in a population or community's collective memory and act as a powerful reminder of the need for preventive action and preparedness in the face of possible future events. Memories of past events must be kept alive for them to continue to play a role in the current context.

Effective Communication Channels

- Under the European Electronic Communications Code (ECCC), all EU Member States were required to implement modern public warning systems by 2022, with the capacity to send alerts to people's mobile telephones. Ireland is one of very few Member States that has not met the requirements of this directive to date. Two systems, Cell Broadcast and location-based SMS, are compatible with the ECCC Directive. Both are GDPR compliant and do not require users to subscribe.
- Current public safety messaging in the Irish cross-border region is overly reliant on commercial social media platforms.
- Social media is not the most effective communication channel for reaching all groups of society. In particular, older and other vulnerable people are less likely to be reached by social media. Social media may, however, be an effective tool in reaching migrant communities with low levels of English, as short, written messages can be easily translated.
- As a consequence of the pervasive nature of contemporary communication technologies, some people may choose to opt-out (e.g. not using a smartphone) or be very selective in their media consumption (e.g. telephones set to silent outside of work hours). It cannot be assumed that people will receive relevant information via news broadcasts on radio or television.
- Online community messaging boards can play an important role in the preparation and response phases but should not be viewed as or become, by default, the primary source of information during and in the immediate aftermath of an incident.

- The ability to control the narrative presents a key challenge to coherent public communication. Different versions of the same incident or risk may be communicated and distributed via multiple channels. In many cases, the original source of information may be difficult to identify or verify.
- Irresponsible and insensitive journalism can create additional challenges in the immediate aftermath of, and longer-term recovery phase following traumatic incident.

Clear and effective communication is essential to emergency management and disaster risk reduction. Coordinated communications – both between the diverse range of first responders and the citizens with whom they must effectively communicate – is critical in raising awareness, ensuring preparedness and coping with the aftermath of major incidents. Consistent and clear public safety messaging is essential in building resilience through information to communities on how best to prepare for an emergency and to deal with its effects should the need arise. A key challenge for public safety messaging is creating an effective link between the technical level of inter-agency communication, and public engagement and communication at community level. Even where robust and effective warning systems are in place, public safety tends to depend on interpersonal and community-based relations and informal communication.

Effective and timely response to extreme events depends to a large degree on the social perception of environmental hazards and risks (Cothorn, 2019). How potential hazards are perceived varies significantly among social and demographic groups and is substantially informed by personal experience, and/or awareness of past events and levels of eco-anxiety, or perceived stress for future potential events. Increasing community resilience requires awareness-raising and engagement with diverse groups. Public safety communication must be specifically tailored to effectively reach all sectors in society including those with particular vulnerabilities.

1.1 Public Safety Messaging in a Media Society: Information Overload and Media Saturation

Emergency management and public safety messaging takes place in a world characterised by the ubiquitous presence of information and communication technologies. Citizens and community groups no longer rely on word-of-mouth, newsletters, noticeboards and meetings to share and receive information. Many of us no longer look primarily to public television and radio broadcasters or printed newspapers to stay informed about current events, whether local, national or international. The contemporary media landscape is increasingly diverse, diffuse and, in parts, disconnected from what is happening ‘on the ground’ in real-time. We face a paradoxical situation whereby almost instantaneous access to information, almost everywhere, does not necessarily lead to the public being better informed. As society has become more diverse and more mobile, so too have the media channels (whether broadcast or social, print or digital) that people use to communicate and interact. Due to the pervasive nature of contemporary communication technologies, some people will also choose to opt-out (e.g. not using a smartphone) or be very selective in their media consumption (e.g.

telephone set to silent outside of work hours). Others may find themselves precluded from accessing key information via smartphone or other digital means due to visual impairment or a lack of digital skills. As a consequence, the task of communicating key messages or warnings to the public in cases of emergency has not become easier with the more advanced communication technologies. Rather, public safety messaging, irrespective of the medium, must compete for attention in an increasingly crowded, fragmented and sometimes exclusionary media landscape.

1.2 Public Safety Messaging and Community Engagement: A ‘Whole Society’ Approach

This study places particular emphasis on the relationship between public safety messaging and public engagement. We consider the two to be intertwined. From this perspective, public safety messaging is considered within its broader context of multi-directional communication flow between public authorities, community organisations and the general public. We recognise public safety messaging to be concerned with not only the dissemination of information but also with building relationships of trust, listening to other perspectives and conveying empathy in the face of difficult situations. Based on experience in the North American context, this may be described as a ‘whole community’² approach to emergency management, whereby

residents, emergency management practitioners, organisational and community leaders, and government officials can collectively understand and assess the needs of their respective communities and determine the best ways to organise and strengthen their assets, capacities, and interests... (to build a) more effective path to societal security and resilience (US Federal Emergency Management Agency - FEMA, 2011; Kapucu, 2015).

The value of a ‘whole society’ approach is borne out in our own engagement with local communities in the border region through this research process. At the same time, the study highlights the need for maintaining clear divisions and a healthy balance between the statutory responsibilities and roles of public authorities and those of local community organisations.

² Within the emergency management literature, the term ‘whole community’ approach refers to the engagement of government, at all levels, with communities and individuals when responding to disasters. A ‘whole community’ approach to emergency management encompasses key concepts such as understanding and meeting the true needs of the entire affected community and engaging all aspects of the community (public, private, and civic) in both defining those needs and devising ways to meet them. For the purposes of this study, and being respectful to the nuances of language across different sectors of society, we have selected to use the term ‘whole society’ approach to avoid any misunderstanding with regard to the meaning of the word ‘community’ in the Northern Ireland and cross-border region context.

1.3 Emergency Management and Public Safety Messaging in a Cross-Border Region

Internationally, it is acknowledged that coordinated communication and messaging is a fundamental challenge to all emergency response agencies, with border regions facing additional technical, operational, and policy obstacles as well as geographical differences on either side of the border. Operating environments can pose unique challenges to national, regional and local responders working within and across regional boundaries. Furthermore, border community populations vary widely from sparsely populated rural areas and towns to more densely populated metropolitan areas. Population density and settlement patterns, in turn, impact the types of interoperable solutions that will be most effective for a particular community.

Cross-border regions face specific sets of challenges when it comes to emergency management. Legislative, institutional and policy differences in neighbouring jurisdictions contribute to a situation where effective and coherent responses to emergency incidents are dependent on the depth and quality of cross-border interaction and cooperation. Public authorities must ensure that the people living in border regions are not disadvantaged by where they live. This requires an ongoing commitment to, and monitoring of, response times and other indicators of emergency preparedness and response.

On the island of Ireland, cross-border cooperation on emergency planning is a constituent of one of the cooperation areas identified under the terms of the Good Friday/Belfast Agreement of 1998. Accident and emergency services and planning for major emergencies are all encompassed within health, one of six high-level cooperation areas under the aegis of the North South Ministerial Council (NSMC) in which cooperation is taken forward. In the Irish cross-border region, Cooperation and Working Together³ (CAWT) and, more recently, the Cross Border Emergency Management Group (CBEMG) has laid the groundwork for inter-jurisdictional cooperation at both strategic and operational levels (see Figure 1.1.).

Achieving coherence in public-safety messaging, however, remains critical to avoid distrust, confusion and complacency. For the message that cross-border emergency management is coherent, well-coordinated and efficient, to reach cross-border communities, inter-jurisdictional cooperation needs to become more visible, to be seen to work.

³ Established in 1992 with the signing of the Ballyconnell Agreement, CAWT is the cross border health and social care partnership for the Health Service Executive in Ireland and the Southern and Western Health and Social Care Trusts, the Strategic Planning and Performance Group (formerly Health and Social Care Board) and the Public Health Agency in Northern Ireland.

Figure 1.1: Geographical Area of the CBEMG



(Source: CBEMG, 2021).

1.4 The Purpose of this Report

There are four key objectives to this study co-funded by the Department of An Taoiseach and the Department of Defence - Office of Emergency Planning under the All-Island Disaster Risk Reduction Shared Island Research on Emergency Planning Cooperation 2023 Programme, namely:

- To build a better understanding of existing practices of local public safety messaging;
- To assess the extent of cross-border coherence in public safety and emergency management messaging;
- To draw learning from international good practice; and
- To develop recommendations for improved cross-border public safety messaging.

This research recognises that coordinated communications – both between the diverse range of first responders and the citizens with whom they must effectively communicate – is critical in both raising awareness and ensuring preparedness in emergency situations. It is well understood that a key challenge for public safety messaging is creating an effective link between the technical level of inter-agency communication, and public engagement and communication at community level. Even where robust and effective warning systems are in

place, public safety tends to depend on interpersonal and community-based relations and informal communication. This research considers the link between the communications and communities in the Irish border region, using a case study approach. The two case study towns, drawn from neighbouring counties and spanning an international border, are:

1. Clones, County Monaghan
2. Lisnaskea, County Fermanagh.

The structure of this report reflects the key areas of analysis as part of this research. This chapter introduces the research programme while also outlining the critical importance of clear public safety messaging in building resilience through the provision of timely, consistent and accurate information to communities on how best to prepare for an emergency and to deal with its effects should the need arise. In Chapter 2, the research team provides an overview of existing governance arrangements for disaster risk management and public safety messaging on both an intra-jurisdictional and cross-border basis. Chapter 3 provides a brief review of international good practice of cross-boundary cooperation in emergency management, paying particular attention to the importance of memory, language in communication, interdisciplinary collaboration and understanding the risks and vulnerabilities of the regions in question. With climate change resulting in more extreme natural events, there is a greater need than ever to draw on good practice and learning from elsewhere.

Chapter 4 provides insights into the maturity of the various approaches being used across both jurisdictions on the island of Ireland in public safety messaging and the extent to which these are strategic, coordinated and responsive to actual needs. The issue of scale is also important, with local messaging tending to be more effective. Chapter 5 reflects on the focus groups held in both case study locations (Clones and Lisnaskea) in October 2023. It considers the role and effectiveness of social media in public messaging, the relationship between public safety messaging and community engagement, and the requirement for inter-agency cooperation. It also provides insight into the differences (perceived or real) in governance culture and institutional arrangements between Ireland and Northern Ireland. Chapter 6 considers the perceptions and reflections of response agency practitioners to managing and coordinating cross-border emergency management, including public safety messaging. This draws on discussions held during a workshop with the Cross Border Emergency Management Group (CBEMG) in December 2023 which considered a number of different emergency scenarios. Chapter 7 puts forward a number of key recommendations based on this primary and secondary research; with a strong emphasis being placed on communication style/content, the role of various agencies, and the mutual benefits of inter-agency and inter-jurisdictional collaboration.

This research has been undertaken by the International Centre for Local and Regional Development (ICLRD) research team at Maynooth University. The ICLRD is a North-South-U.S. academic partnership established in 2006 to explore and expand the contribution that planning and the development of physical, social and economic infrastructures can make to improve the lives of people on the island of Ireland and elsewhere. For further details on the multidisciplinary ICLRD Research Team involved in this study, see Appendix A.

2 GOVERNANCE ARRANGEMENTS FOR DISASTER RISK MANAGEMENT AND PUBLIC SAFETY MESSAGING

2.1 Introduction – International and Island of Ireland Context

Border regions and communities face particular challenges in the coordination of effective and timely responses to major emergencies and in achieving coherent and consistent public safety messaging across jurisdictional boundaries. The United Nations Sendai Framework for Disaster Risk Reduction (2015) emphasises the importance of international, transboundary and bilateral cooperation. The Sendai Framework furthermore stresses the need for ‘all-of-society’ engagement and partnership based on inclusive, non-discriminatory practices and coordination across all relevant sectors and stakeholders. The Sendai Framework explicitly recognises the role of local government in disaster risk reduction, stating that local authorities and local communities must be empowered to reduce disaster risk and build resilience through the allocation of resources, incentives and decision-making responsibilities, as appropriate (see also Medway et al 2022). This is significant as pre-existing EU policies on civil protection (Union Civil Protection Mechanism) focus only on actions by Member States (Soldi, 2016). In both Ireland and Northern Ireland, responsibility for disaster risk management is partially decentralised. There is a long-standing tradition of mutual assistance between the emergency services on both sides of the Irish border. These arrangements between individual emergency services in both jurisdictions continue to operate and are supported through the Cross Border Emergency Management Group (CBEMG). It is nevertheless the case that distinct legislative and policy frameworks persist in each jurisdiction with potential implications for the coherence of emergency response and public safety communication at a local level.

2.2 Disaster Risk Management and Public Safety Messaging in Ireland

In the case of Ireland, the Office of Emergency Planning (OEP) was established in 2001 as a unit within the Department of Defence and tasked with taking a lead role in emergency planning, providing advice to central government and coordinating the responses of government departments and public sector agencies at a strategic level (Joyce & McCaffrey 2015). At an operational level, however, lead responsibility lies with the Department of Housing, Local Government and Heritage (DHLGH). The *Framework for Major Emergency Management* published by the Department of Environment, Housing and Local Government

(DEHLG)⁴ in 2006 continues to be the key statement of national policy. It is not supported by underpinning legislation (DEHLG 2006). A ‘Major Emergency’ is defined as:

Any event which, usually with little or no warning, causes or threatens death or injury, serious disruption of essential services or damage to property, the environment or infrastructure beyond the normal capabilities of the principal emergency services in the area in which the event occurs, and requires the activation of specific additional procedures and the mobilisation of additional resources to ensure an effective, coordinated response (DEHLG 2006, p. 15).

Major emergencies are thus distinguished as those requiring a coordinated regional and/or national response, considered to be beyond the capabilities of local first-response emergency services. Under the 2006 Major Emergency Management (MEM) Framework, An Garda Síochána, the Health Service Executive (HSE) and local authorities are accorded the status of principal response agencies. Each principal response agency is required to prepare an individual Major Emergency Response, setting out its response in the event of a major emergency. A lead agency concept was introduced whereby responsibility for tasking charge and coordinating response falls to one of the three principal response agencies, depending on the type of incident. Where responsibility is not immediately obvious, it defaults to the local authority.

The 2006 Framework led to the establishment of eight MEM regions tasked with inter-agency coordination of major emergency preparedness and management (see Figure 2.1.). Regional steering and working groups have been operational since 2008, comprising representatives of the three principal response agencies. The boundaries of the MEM regions do not correspond to the boundaries of the Regional Assemblies or the former Regional Authorities⁵. The border counties of Donegal and Leitrim fall within the North West MEM region, whereas Cavan, Monaghan and Louth form part of the North East MEM.

In 2023 the Office of Emergency Planning published guidance on communications in strategic emergency management (Department of Defence, 2023). This guidance applies primarily to government departments and national-level public agencies. It does not provide guidance on the communications of local authorities with the public. Nevertheless, some of the key principles outlined are transferable. The role of communications in emergency management is summarised as follows:

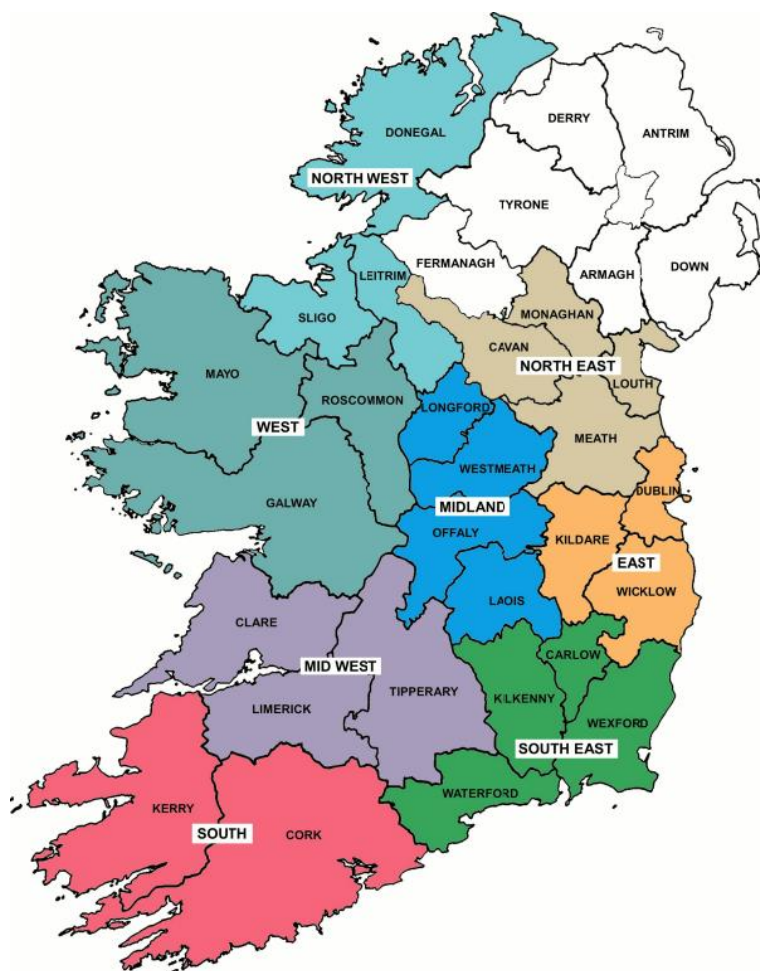
The objective of all emergency communications is to protect the public and responders, by ensuring that the necessary information is available to facilitate timely and informed decision making, and that the public and responders are

⁴ Now DHLGH

⁵ The functions of the Regional Authorities were transferred to the Regional Assemblies in 2015.

given relevant, timely, concise, complete and accurate information and advice regarding imminent and ongoing emergencies.

Figure 2.1: Major Emergency Management Regions in Ireland

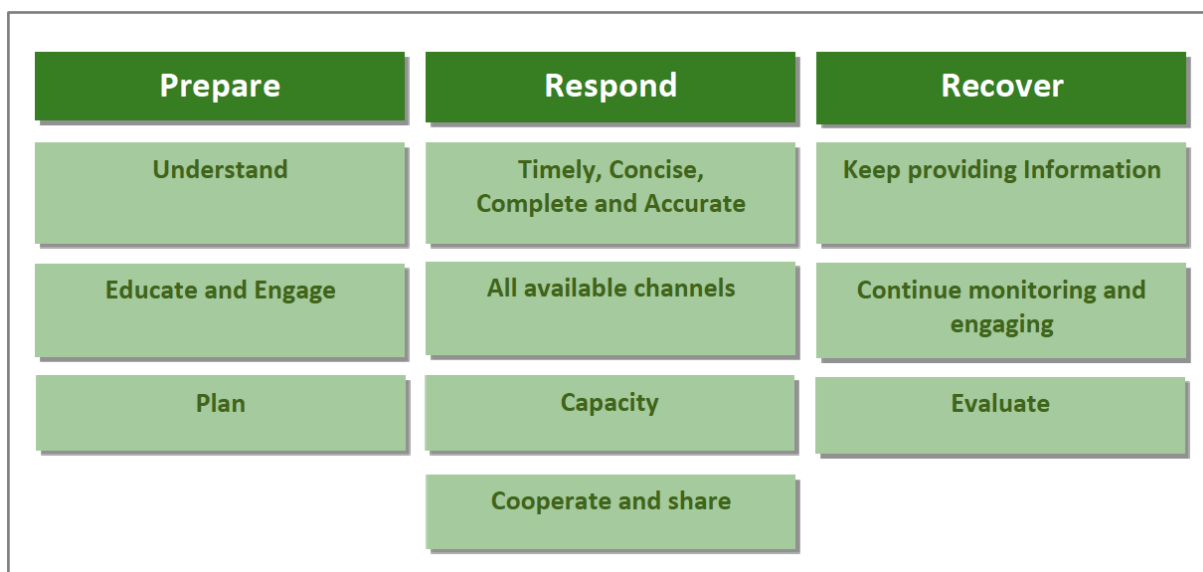


(Source : DEHLG 2006, in Joyce & McCaffrey 2015)

Here, the functions of communications are understood in terms of providing information as a basis for better decision-making. It is assumed that complete and accurate information is available to public authorities. Moreover, this technical understanding of communications, as outlined in the definition above, does not reflect the broader context of building relations of trust, providing empathic leadership and awareness of community perceptions characteristic of the whole society approach underlying this study. It is, however, acknowledged that emergency communication should be a ‘two-way process’, including channels for feedback from the public and allowing for public concerns and misinformation to be addressed. Distinct requirements are identified for each of the three stages of emergency management; prepare, respond and recover (see Figure 2.2.).

The SEM Communications Guidance calls for lead government departments (LGDs) to prepare generic emergency communications plans. These plans should be: a) aligned with the different stages of the emergency management cycle, b) coordinated with the plans of support departments and other relevant agencies, c) included in the practical arrangements to enable a timely and efficient response, d) accepted and understood across the organisation and should be approved by the Management Board of the LGD, and e) regularly exercised, tested, reviewed and updated on an ongoing basis.

Figure 2.2: Communication requirements during the three phases of emergency management.



(Source: Department of Defence 2023).

It is further noted that departments and agencies will need to plan for a media response at local and national levels, recognising that “there are very clear and different roles for communications staff at the Local and National levels”. How the roles of communications staff at local and national levels might differ is not further specified, but it may be assumed that this is in relation to their engagement with national and local media, respectively. The SEM Communications Guidance does not provide concrete recommendations with regard to channels of communication, nor does it address the resourcing requirements for emergency management communications at the local level.

2.3 Disaster Risk Management and Public Safety Messaging in Northern Ireland

Emergency management in Northern Ireland is underpinned by legislation in the form of the United Kingdom’s (UK) *Civil Contingencies Act, 2004* (Part 2). At a policy level, the Civil

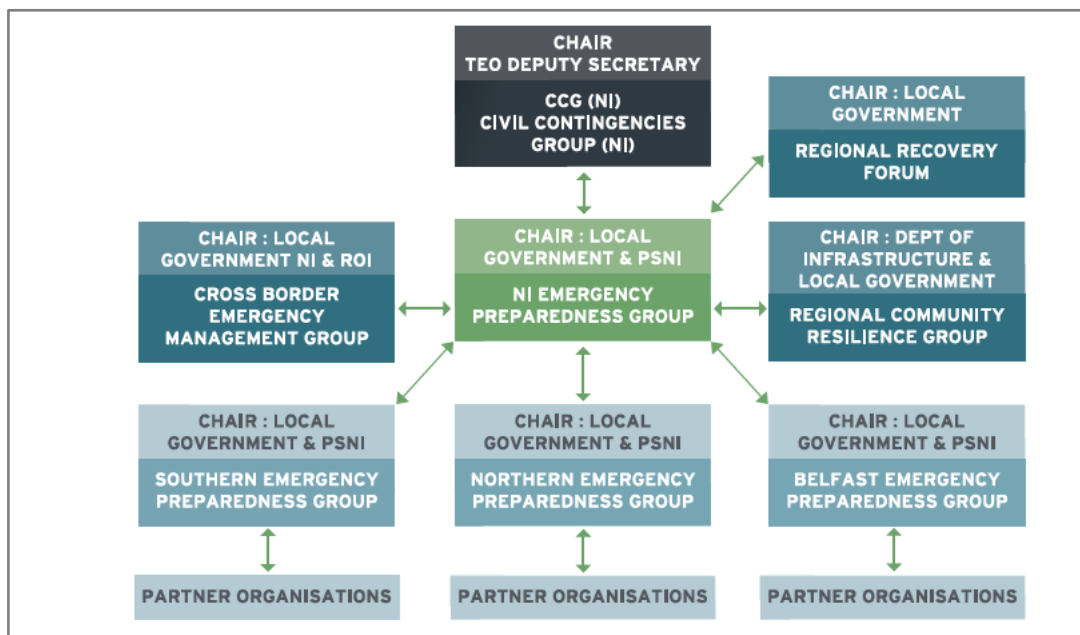
Contingencies Policy Branch (CCPB), operating under The Executive Office (TEO) is responsible for promoting and coordinating the development of emergency planning and response arrangements across the public sector in Northern Ireland. The CCPB supports the work of the Civil Contingencies Group (CCG NI), the principal strategic civil contingencies preparedness and management body. CCG NI comprises senior level membership from all Northern Ireland government departments, the Executive Information Service (EIS), the Northern Ireland Office (NIO), district councils and the emergency services. In the case of an emergency response (of regional or higher significance), it is chaired by the Head of the Northern Ireland Civil Service. The Executive Office (TEO), first introduced in 2005, sets out principles for emergency planning, resilience and recovery and outlines the key roles and responsibilities of the various organisations involved.

Under this framework, local emergencies are characterised as those that allow for a response in and across council and the Police Service of Northern Ireland (PSNI) boundaries. Regional emergencies, by contrast, require Northern Ireland Executive involvement. In the event of a local-level emergency, it must first be determined whether there is a risk to life or not. If not, local district councils will take charge of coordinating response arrangements. If there is a major and imminent threat to life, the PSNI is tasked with the coordination of a multi-agency response. Emergency Preparedness Groups are responsible for emergency planning at a sub-regional level and play an important coordination role in the preparation phase. Figure 2.3. illustrates the relationships between the various organisations and coordination bodies in the Northern Ireland system (TEO, 2023, 18).

The *Northern Ireland Civil Contingencies Framework* emphasises the importance of consistency of messaging to enable and maintain public confidence and notes that this can only be achieved through collaborative information sharing. It is further stressed that agencies should adopt a multi-channel approach to communications with the public. The following options are listed in the document: TV, radio, digital space, leaflets, newspaper or printed formats. It is recommended that media experts are brought in at an early stage.

In the case of local emergencies, arrangements for communicating with the general public are to be coordinated at tactical (Tactical Coordination Group) or strategic (Strategic Coordination Group) levels of decision-making. Where there is a recognised major and imminent threat to life, however, the PSNI will take responsibility for communications (TEO 2023, 51-52). The EIS has a key role in supporting the coordination of key messages and in the development of a core script for use by all responders.

Figure 2.3: Local structures for emergency preparedness in Northern Ireland



(Source: TEO, 2023)

2.4 Working Across Jurisdictions: Emergency Management and Public Safety Messaging in the Cross-Border Region

Neither the *Northern Ireland Civil Contingencies Framework* nor OEP guidance on strategic Emergency Management make explicit reference to arrangements for cross-border cooperation with respect to responses to local-level emergency incidents or to a need for cross-coordination in the preparation and recovery phases. The *EU Civil Protection Mechanism* facilitates the provision of assistance between member states in the event of major emergencies. A request for assistance during a major emergency between Ireland and Northern Ireland has not been invoked to date. The CBEMG was established in 2014 with the aim of advancing cooperation between all of the statutory agencies involved in emergency management within the border counties of both Ireland and Northern Ireland (CBEMG, 2021). In 2019 the CBEMG introduced a multi-agency protocol for cross-border notification, providing arrangements for coordination on a multi-agency cross-border basis in the event of major emergencies/incidents (CBEMG, 2023). This study aims to feed into the ongoing work of CBEMG in delivering cross-border coherence in emergency management.

3.1 Introduction

As outlined in Chapter 1, understanding the specific set of challenges facing border regions - and how these are evolving - together with clear, effective and coordinated communication and partnership working are essential to emergency management and disaster risk reduction. Experience tells us that emergency situations can become amplified on a cross-border basis. Such amplification, according to Murphy et al, “is largely the result of more agencies becoming involved in the response; groups that are often geographically dispersed, bring more divergent agendas to the ‘table’ and are often less well acquainted with each other” (2016, 34). The following four case studies draw on international good practice in each of these areas - drawing not only from collective memory and the value-added that can result from data analysis and geographic information systems (GIS) to multi-agency partnerships spanning from national to regional to local response agencies, to joint training exercises that ‘test’ the various critical incident and disaster management plans from the point of alarm-raising to recovery phase. These cases demonstrate an increasing importance being attached to local knowledge (including historic knowledge) and the need for more interdisciplinary collaboration. Just as natural disasters don’t always adhere to borders, nor should responses be unidimensional or silo-based.

3.2 Flood Events and Collective Memory in Hamburg and at the German North Sea coast

At Germany’s North Sea coast, past events, some dating to mediaeval times, continue to be present in the collective memory (Kempe, 2006). A catastrophic storm flood in January 1362 led to the loss of Rungholt, an important coastal trading centre of its time in northern Friesland. A flood event in 1634 is recorded as responsible for the loss of almost 10,000 lives in the same region. In the ‘Christmas Flood’ of 1717, the settlement of Itzdendorf, at the coast of Eastern Friesland was lost to the sea. Such events form part of a narrative of a collective struggle against the wild North Sea, manifested in a centuries-long tradition of community-based dike-building and land drainage at the coast.

Personal experience of past events can contribute to a heightened awareness of future risks. This is particularly relevant with regard to events such as flooding, where the likelihood of repeat occurrence is relatively high. Individual memories that begin at the time of an event become, over time, collective memories through processes of interaction both vertically (across generations) and horizontally (across a community). They may become reinforced or

institutionalised through public processes of commemoration. Memory serves as a link between past, present and future disaster events.

In 1962, a storm surge and subsequent flooding (caused by spring tides and storm-force winds coming from the northwest) led to an emergency situation along the German North Sea coast, whereby the city of Hamburg, located 130 kilometres (km) inland, on the estuary of the river Elbe was most severely affected. 315 people in Hamburg, many of whom were migrant workers, refugees and displaced persons, living in Wilhelmsburg, a part of the city built on islands in the Elbe, lost their lives and 20,000 lost their homes. Whereas, historically, Hamburg and surrounding lowland areas were affected by flooding on multiple occasions, the last severe event occurred in 1855, no longer within living memory. This, combined with the toll exerted by two world wars, led to a relative neglect of flood protection in the post-war years, and despite the catastrophic impact of the ‘Holland Flood’ at the Dutch North Sea coast in 1953, public authorities were slow to prioritise flood protection. When storm warnings for the North Sea coast were issued in February 1962, the residents of Hamburg were slow to react and reluctant to leave their homes, feeling safe, due to their location more than a hundred kilometres from the coast (de Guttry and Ratter, 2022).

The floods of 1962 led the city of Hamburg, and the relevant authorities in the neighbouring federal states of Schleswig-Holstein and Lower Saxony to initiate major programmes of flood-protection, strengthening and rebuilding hundreds of kilometres of dikes along the length of the North Sea coast and the Elbe river. Over the course of the next sixty years, the memory of 1962, has been alive through official commemoration events, documentaries and public memorial monuments. In the official narrative, 1962 has become a turning point in the history of the city. Local political leaders emphasise that although the city has faced more severe storm floods in recent decades, the dikes have held and the safety of the city’s population is assured. A key lesson of 1962, however, is that flood protection requires community awareness and preparedness as well as hard infrastructure. Some see a risk that the memory of the 1962 will fade, and be replaced by potentially misplaced feelings of the safety behind the dikes as the frequency and magnitude of severe storm flood events increases due to the impacts of climate change (de Guttry and Ratter, 2022).

Figure 3.1. depicts flood ‘markers’ erected in prominent locations at the coast, either freestanding or on the sides of buildings. These show the level reached by floodwaters in the past and serve as a powerful reminder of what has happened historically and can occur in the future. The example to the left shows the levels reached by floods over a period from 1362 to 1976. The example on the right exhorts residents and visitors to ‘think of the next flood’. These public records of the past should foster awareness and preparedness in the face of future events.

Figure 3.1 a, b: Storm flood marker in the coastal towns of Husum and Tönning, Northern Germany



(Source : <http://www.sturmflutmarken.de>).

3.3 Public Warning Systems: Cell Broadcast and Location-Based SMS

The European Electronic Communications Code (EECC, EU 2018) adopted in 2018 made it mandatory for all EU Member States to implement modern public warning systems, requiring public authorities to be able to send alerts to people's telephones within a determined area, by June 2022.

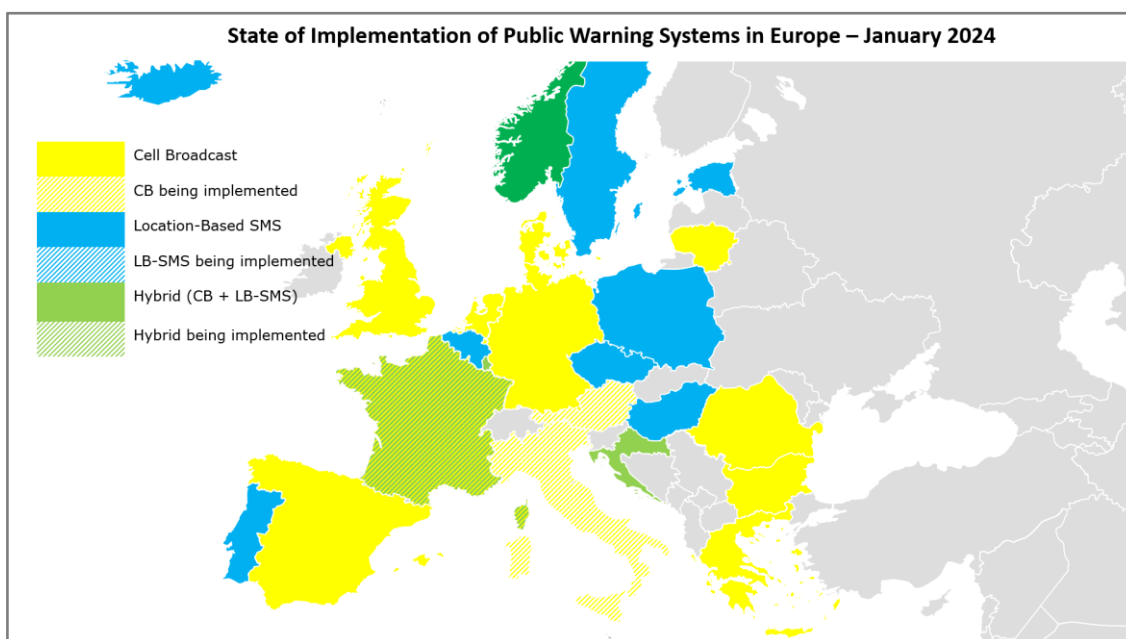
By 21 June 2022, Member States shall ensure that, when public warning systems regarding imminent or developing major emergencies and disasters are in place, public warnings are transmitted by providers of mobile number-based interpersonal communication services to end-users concerned (EECC, Article 110).

Both cell broadcast (CB) and location-based Short Message Service (SMS) are compatible with the requirements of the EECC Directive. Ireland is currently one of only a very few EU Member States which have not implemented either system to date. The other exceptions are Latvia, Slovenia and Slovakia. Italy and Austria are in the process of implementing CB systems.

As a broadcast technology, CB operates on a similar basis to a radio broadcast. A message is sent out and, in principle, will be received by all compatible devices within a specific range.

All people, with a mobile phone, located in an area at the time of a disaster or disaster risk would receive an alert with a distinctive ringtone and vibration (heard even if a device is on silent). Public authorities can use this technology to alert almost instantaneously (usually within 10 seconds) the population present near a disaster (with the possibility to narrow it down to a few metres) in a manner that does not impact on privacy (data protection) rights⁶. A CB message has a maximum length of 1395 characters. The user needs to acknowledge (i.e. click/swipe) the message before being able to use the phone. The language of the message received depends on the language settings on the receiving device.

Figure 3.2: State of implementation of public warning systems in Europe - January 2024



(Source: European Emergency Number Association - EENA⁷)

In order for users to receive CB alerts, telephones must have CB alerts enabled. It is possible for public authorities to request the activation of CB by default. It is, nevertheless, important that mobile phone users can opt-out of cell broadcast. One scenario, where this is relevant, is where persons at risk of domestic abuse have a hidden phone for use in certain situations, which must remain hidden from the person they are living with (Easthope, 2022). CB messages are not affected by network congestion. This is a major advantage of cell broadcast technology (EENA, 2019)⁸.

⁶ <https://eena.org/our-work/eena-special-focus/public-warning/>

⁷ <https://eena.org/our-work/eena-special-focus/public-warning/>

⁸ https://eena.org/wp-content/uploads/2021_02_18_PWS_Document_FINAL_Compressed.pdf

A second technology – location-based Short Message Service (SMS) - can also be used to alert the population in a specific area in near real-time. In this case, public authorities issue alerts via regular SMS, transmitted through cellular base stations in an anonymised way.

Through this technology, it is possible to send messages in different languages based on the country of origin of users' SIM cards. Location-based SMS can be impacted by network congestion, but it is possible to overcome this, through prioritised SMS - at least partially. Setting up a location-based SMS requires public authorities to work directly with mobile network operators. Personal data is not received or stored by the public authority. Location-based SMS has the advantage of working on any handset that can receive SMS. Investment costs are relatively low as the technology integrates directly with existing systems used by mobile operators. As a well-known communication medium SMS alerts are less likely to cause panic or unwarranted anxiety among vulnerable groups.

For this reason, location-based SMS may be more appropriate than CB when issuing warning messages with a lesser degree of urgency. For example, in the UK, CB emergency alerts will only be used when there is an immediate threat to life⁹. Location-based SMS, on the other hand, could be utilised to issue weather warnings or in relation to incidences where there is not a widespread threat to life, where it is nevertheless imperative that the general public (within a specified geographical area) is informed as soon as possible (e.g. localised flood risk, water contamination, wildfires or chemicals hazards). Location-based SMS is also considered a suitable medium in cases of more prolonged emergencies where regular updates are required (e.g. heat waves, pandemics, flood events). A number of European countries employ multi-channel public warning systems to ensure very high rates of population coverage. The French government has chosen to combine cell broadcast and location-based SMS in their FR-Alert system which also encompasses and integrates longer public warning systems, including a network of more than two thousand outdoor warning sirens¹⁰. The Dutch cell broadcast-based NL-Alert system was introduced in 2012 and has been used 300 times since. The service reaches 80% of the population aged 12 years and over. In addition to CB, the NL-Alert service incorporates multiple other channels such as public transport displays, commercial advertising displays, an app and alerting via fixed landline telephone for the elderly (EENA, 2019).

To ensure all sections of the population are reached, including vulnerable groups, public warning systems should have the technical capability to reach the visually impaired and hard-of-hearing, in accordance with relevant regulations and standards (e.g. text to speech, visual

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https://assets.publishing.service.gov.uk/media/64161410d3bf7f79df1aaa19/Frequently_asked_questions_about_Emergency_Alerts.pdf

¹⁰ <https://eena.org/blog/fr-alert-a-european-reference-combining-cell-broadcast-and-location-based-sms/>

warning signals). A multi-channel approach can help to cater for vulnerable groups with diverse needs.

3.4 The Australian Disaster Resilience Handbook Collection

The Australian Disaster Resilience Handbook Collection is a collection of resources designed to provide authoritative information on disaster resilience in Australia (Australian Institute for Disaster Resilience, 2023). Experts in emergency management were involved in the development of the handbook, designed to offer guidance on national principles and best practices for various aspects of disaster preparedness and response. This handbook provides a backdrop for the processes behind issuing warnings and strategies for keeping the public informed during disasters. It outlines nationally approved principles for crafting warnings and emphasises clear, consistent communication across various channels.

The handbook also forms part of a wider collection that encompasses three primary contributions to the wider understanding of crisis communications. Firstly, it suggests consideration about the source of knowledge being proposed. It serves as a trusted and freely available resource for anyone interested in understanding disaster resilience principles in Australia. Secondly, it aims to connect national disaster resilience strategies and policies with practical implementation by providing guidance to various stakeholders including government agencies, organisations, and individuals. It also highlights areas of good practice between agencies, private sector, local businesses and community groups. Lastly, the handbook emphasises and encourages the adoption of effective approaches to building resilience against disasters across Australia.

Arguably, a handbook, or set of guidance similar to this handbook would be well received in the cross-border community. Such guidance from a cross-border perspective would be highly useful for the respective response agencies. Of particular relevance to the current project is the overview and breakdown of the structuring of particular messaging that is required across a range of different crisis situations. Specifically, it proposes that a body whose responsibility it is to communicate warning messages should adhere and incorporate the following constructs in a warning message:

- The name/title of warning;
- Who is issuing the warning (which might be evident from the delivery channel, such as a social media profile name or official government web address);
- A clear call to action (i.e. what to do to protect life and property);
- The type of threat (and preferably a description);
- How likely it is to happen;

- How bad it is expected to be;
- Where the threat applies/who is affected;
- When it is expected to happen;
- Where to get more information or to report events; and
- When to expect the next update.

Furthermore, specific guidance is encouraged in terms of the language type that is used in the messaging. Such advice indicates that there are spectrums of phrasing that should be used to ensure efficient and effective communication of messages: ranging from damaging to severe to extremely severe. This structuring is key to communicate the likely impact or consequence without misinterpretation of the initial messaging. Lastly, the Handbook advises caution in terms of use of descriptors for locations of crisis events.

Whilst this report does provide guidelines for the type of messaging that may be most effective, it does not tackle the content generation strategies, or discuss content management and curation in the same manner as the Handbook. Hence, there are key contributions in the Handbook which would offer an overview of best practices for message type, key messaging construction and delivery strategies, wording, tone of voice and timeframe for responses. In particular, for short-form messaging such as SMS and social media posts, it is important to think carefully about what is being said with such a short space within the messaging. A similar type handbook for the island of Ireland would be a valuable asset to emergency management protocols.

3.5 Knowledge, Training and Exercise in Cross-Border Emergency Planning

With 37.5% of the EU population living in border areas (European Committee of the Regions, 2019), it is increasingly important to undertake cross-border exercises that test the ability of the emergency agencies, and other key stakeholders as relevant, to respond jointly in the event of a major medical emergency in a border region. As noted by McClelland, “it is an obvious truism to state that natural disasters or man-made crises are no respecters of jurisdictional boundaries” (2014, 15). Research by the ESPON 2020 programme on cross-border public services identified a strong focus on civil protection and disaster management across the Nordic states, and on medical emergency or rescue services along the Austrian, Czech and German borders and Belgian-French border (2018).

The Nordic states have a long-standing history of cooperation on rescue services across borders. Nordred is a Nordic rescue service cooperation agreement between Denmark, Finland, Iceland, Norway, and Sweden. The special framework agreement underpinning Nordred was signed in 1989. It became effective for Sweden in 1992, and Iceland joined in

2001. The purpose of Nordred is to promote collaboration within the rescue services between countries in various ways, both with respect to operational cooperation in rescue operations but also to develop the rescue services¹¹. The commitment of the Nordic states to joint collaboration on civil protection and preparedness is also strongly recognised in the Haga Declarations (both 2009 and 2013¹²) and forms a strong part of their 2022-2024 priorities. This is, in large part, driven by climate change which is leading to more extreme natural events in the Nordic region. The significance of a growing climate emergency led the Nordic states to sign the Copenhagen Declaration in February 2020¹³. Under this Declaration, the Nordic rescue services commit to working together on preparedness and in preventive work against major natural events. This includes areas of compatible equipment, information sharing and joint exercises¹⁴. At a local and/or regional level, and complementary with Nordred, the Nordic States have also established a number of cross-border regional and municipal agreements between neighbouring Nordic regions. In the case of Norway and Sweden's borders, for example, three border rescue councils have been established involving key Swedish and Norwegian actors.

As is the case on the island of Ireland, the border between Sweden and Norway is described as "soft"; with collaborations on preparedness and rescue operating to a common standard of an invisible border. The Border Rescue Council for Inland Norway and Dalarna and Värmland counties in Sweden, for example, was established in the 1990s to clarify and further develop cooperation on a cross-border basis in the areas of rescue services, civil protection and emergency preparedness. Its core goal is "through planned collaboration, obtain the best use of resources in various types of borderline events where life, property and the environment are threatened"¹⁵. This is to be achieved, amongst other ways, through better utilisation of personnel and material resources. The principle of subsidiarity provides that crises should be managed at the lowest level possible, and this is a core principle of the formal agreement underpinning the Border Rescue Council. Critical to the success of the Border Rescue Council is having all the critical agencies at the table – this includes the County Administrative Board of Värmland, the County Administrative Board of Dalarna, Hedmark County in Norway, the county councils of Dalarna and Värmland, as well as rescue services,

¹¹ See <https://www.msb.se/en/about-msb/international-co-operation/nordic-co-operations/nordred---cooperation-between-emergency-services/> and <https://www.nordred.org/> for further details.

¹² The Haga Declaration initially suggested six areas of common interest between the Nordic States: rescue services, exercises and training, response to Chemical, Biological, Radiological and Nuclear emergencies, crisis communication with the populace, the use of volunteers, and civil protection-related research and development. Further areas of cooperation were subsequently added under the Haga II process (Bailes, 2014, p.2)

¹³ See <https://www.msb.se/siteassets/dokument/om-msb/internationella-samarbeten/the-copenhagen-declaration.pdf>

¹⁴ The Copenhagen Declaration commits to working together "towards more compatible equipment, share tactics and procedures, more systematically share knowledge about metrological and civil protection risk forecasting, develop common procedures for coordination and logistical support of incoming Nordic assistance, and investigate the option for joint exercises. This work will be driven forward in existing Nordic working-groups and to a relevant extent, within the framework of the regional cooperation under the EU Civil Protection Mechanism.

¹⁵ <https://www.nordred.org/sv/gransraddningsrad/varmland-dalarna-hedmark/>

medical care, police, alarm centres from both Sweden and Norway and the Norwegian Civil Defence. The Border Council meets twice a year to discuss strategic and operational issues.

Operationally, core areas of focus of the Border Rescue Council include:

- Coordinate and document what resources are available in the event of an emergency;
- Build and maintain a network of core personnel involved in rescue services and wider community preparedness;
- Exchange knowledge, information and experience;
- Build awareness of the problems that exist in the border area and to find common solutions;
- Develop a common alarm system;
- Undertake cross-border exercises; during five-year periods, three major exercises are envisaged; and
- Skill development.

The Council also acts as a network of contacts to use in crisis situations in the wider border area.

A major cross-border exercise in 2010 focused on a traffic accident involving a bus and a minibus and took place in Sälen (Sweden). Planning of the exercise was coordinated by a steering group, with representatives from both sides of the border. Participants in the exercise were emergency responders, the County Administrative Board of Dalarna, Hedmark County, Malung-Sälen, Falun, the alarm centres and the Norwegian Civil Defence. The overall purpose of the exercise was to evaluate how well the cooperation and collaboration worked from the dispatch of the alarm to the collaboration and management on site. After the exercise, a thorough evaluation took place - with evaluations then feeding into the design of subsequent exercises. In January 2011, a two-station alarm system was established in the emergency response stations on each side of the border; the goal being to speed up response times where a cross-county/cross-border joint response is required.

In November 2022, the Scandinavian Mountains Airport in Sälen was the site of a further large-scale cross-border exercise. Located close to the Norwegian border, the focus of the exercise was an aeroplane crash at the airport, and the rescue of the passengers on board. The overall goal was to examine the robustness of the emergency and evacuation plans and routines; to practise cooperation between important functions in a crisis; and to practise cooperation on a cross-border basis between Norway and Sweden. There were approximately 90 people on-site at the airport, in addition to about 40 people from other operators who were at their respective stations (see Figure 3.3.). The exercise was designed to be realistic and was carried out utilising current plans and with active play. Held over four hours, the cross-border exercise highlighted the importance of knowing counterparts within each of the emergency response agencies, locally and across the border.

Underpinning such exercises is the need to understand the joint risks and vulnerabilities facing the border area. In 2016, a joint risk and vulnerability analysis for the border area in Hedmark, Dalarna and Värmland, called GrenseROS, was developed by a project group that involved representatives from the three counties, as part of the project 'Borderless crisis management'.

Figure 3.3: Crisis management agencies at work during cross-border airport exercise.



(Source: Stig Skjeflo, <https://www.statsforvalteren.no/nb/innlandet/samfunnssikkerhet-og-beredskap/krisehandtering-og-samordning/grenseredningsradet/statsforvalteren-ledet-redningsovelse-i-sverige/>)

The resulting analysis, GrenseROS, was not intended to provide a complete overview of all risk factors in the border area but to provide an overview of risk factors that may have consequences for both sides of the national border and/or require rescue efforts and coordination by Swedish and Norwegian authorities. GrenseROS is now a tool for all actors that are part of the Border Rescue Council and the Border Committee for Hedmark and Dalarna. This includes emergency services, county boards, county governors, regional agencies responsible for emergency preparedness, and municipalities in the border area. The resulting analysis informs both measures being put in place to reduce risk, as well as future scenarios and topics for joint exercises being planned by the Border Rescue Council.

In Europe, the Euregio Meuse-Rhine Incident Response and Crisis Management (EMRIC) is identified as good practice in civil protection and disaster management by the ESPON 2020 targeted *Cross-border Public Services (CPS)* analysis, led by Spatial Foresight. The study, published in 2018, identifies 579 CPS along European borders, with the majority dealing with environmental protection, civil protection, disaster management, and transport. Spanning border regions in Germany, Belgium and the Netherlands, EMRIC is a unique partnership of

government departments that are responsible for firefighting, technical assistance, emergency care, infectious disease control, disaster relief, and crisis management in their respective areas. In addition to European frameworks, a number of bilateral agreements further unpin the cooperation between Belgium, Germany and the Netherlands in the areas of civil protection and disaster management. Together, these agreements provide the overall framework for the working of EMRIC. These detail the functioning, management and financing of the service. EMRIC works to multi-annual plans, with the current plan 2019-2024 setting out the main priorities, actions and communication activities. This includes its engagement with more than 30 services and government units in the delivery of its goals and objectives. In 2017, EMRIC coordinated 938 medical emergency calls and 60 deployments of fire fighters. Delivering on this involves more than 200 individuals working for emergency, rescue and fire services, including alarm rooms.

The Euregio Meuse-Rhine (EMR) is relatively densely populated and is highly industrialised. In the case of accidents or local fires, rescue and emergency services are often not sufficient. First implemented in 2006 as an INTERREG-funded project, the EMRIC partners agreed in 2013 to continue with the collaboration for an undefined period (ESPON, 2018b). This was in recognition of the value of cross-border collaboration in emergency management where every second counts and that for some communities, it is their cross-border neighbour that is closest in terms of distance and access in times of emergency. EMRIC works to a 2-year exercise cycle, in which different exercise methods are discussed and tested. Communication, particularly where different languages are spoken, is critical to the success (or not) of disaster management – whether preparedness or rescue. When help is requested from neighbouring regions under the EMRIC partnership, keywords that can be pronounced and understood in the three languages of the Meuse-Rhine Euregio are used. The EMRIC plan, as it applies to incident response and crisis management, also stipulates where the foreign emergency services will be sent, who will coordinate the incident and how the deployment will proceed once initiated.

Climate change is influencing the focus of EMRIC's activities; with flooding and wildfires increasing in frequency. The Marhetak project, for example, was established after the flooding of 2021. Funded by INTERREG, its aim is to strengthen the cooperation between the euregional services that are legally responsible for crisis management and weather, water and soil services in times of a flood crisis. EMRIC, as lead partner, is working with the Public Service Wallonia, the National Crisis Centre in Belgium and the Limburg Water Board to align forecast images, link data sources, harmonise risk assessments and crisis communication. In December 2023, at its final symposium, the partners demonstrated the emergency water barriers purchased within the project and which can be deployed across the EMR region, as well as the Paragon system. This European crisis management system can be used to simulate past events (the flooding of 2021 being a simulated exercise as part of the symposium) and support information exchange between critical stakeholders.

Emergency management training and exercises on a cross-border basis have been strongly supported by the EU-INTERREG programme. Under the 2014-2020 INTERREG V-A Romania-Hungary Programme, the DIRCCES Project (Development of an Integrated Response Capacity to Cross-Border Emergency Situations) resulted in the design and adoption of an integrated approach to risk management. This rural and isolated border region was prone to extensive flooding along the Crisul Repede river as well as being hampered by poor road connectivity. Natural disasters in these areas resulted in social, economic, and environmental costs. The project put a strong emphasis on cross-border collaboration on a regional scale to combat shared risks. This included involving the public by building awareness and engaging them in preparedness. The coordination of joint activities, including simulations and drills, has improved the region's approach to disaster management. Through capacity building, approximately 100 people are now involved in emergency management – on a voluntary or contractual basis -- resulting in reduced response times and improved outcomes.

4 EXISTING PRACTICES IN PUBLIC SAFETY MESSAGING ON THE ISLAND OF IRELAND

4.1 Introduction

A review of existing practices in public safety messaging was conducted, based upon the provision of policy and strategy documents provided by respective councils and support agencies. The formation of groups such as the Northern Ireland Emergency Preparedness Group and the detail indicated in their Emergency Communications Plan (see Figure 4.1.) represents a clear and concise set of actions and steps for all agencies and responders involved to adhere to. Regular review and modification of the Emergency Plans is also recognised as good practice in terms of keeping relevant and useful advice available to all involved.

Figure 4.1: Collaborative communications process for Northern Ireland



(Source: Northern Ireland Civil Contingencies Framework, 2021)

Importantly, embedded in each of these policy and advisory plans, lies a raft of advice for public safety messaging with varying degrees of sophistication and practical detail. To further understand existing practices in public safety messaging, the research team collated a series of key indicators of policy and advice for such messaging, as well as notable examples. The review encompassed the following:

1. National Risk Register 2023 (UK)¹⁶;
2. Northern Ireland Emergency Preparedness Group (EPG) Emergency Communications Plan;
3. The bi-annual Regional Community Resilience Group (RCRG) ezine and email newsletter. It is shared by the Department for Infrastructure (DFI) to all their Community Resilience Groups, the Public Information and Media Group (PIMG), the Local Government Emergency Planning Officers (EPOs) and widely across the EPG;
4. NI Direct Emergencies and Major Incidents Plan¹⁷;
5. NI Direct have a page dedicated to emergencies for the public to access¹⁸;
6. The #30days30waysUK #BeReadyNI campaign¹⁹;
7. A Local Impact Assessment Call (LIAC) which brings together all of the involved agencies and allows a shared understanding of a crisis situation;
8. Video prepared for COP26 about the RCRG²⁰;
9. Monaghan Alerts Scheme; and
10. Fermanagh and Omagh Severe Alerts Leaflet.

From the review of examples of campaigns and strategies, there are certainly commonalities on both sides of the border but also points of divergence. A strategic approach is evident in both jurisdictions to varying degrees of maturity, which seems to operate from the same playbook, with differences in levels of sophistication and technological innovation. On one hand, national strategies such as the UK Risk Register (UK Government 2023) have broad overviews of the risk types to be considered across the UK; however, there is very little consideration at the local level. Smaller agencies in localised areas have been adept at

¹⁶ <https://www.gov.uk/government/publications/national-risk-register-2023>

¹⁷ <https://www.nidirect.gov.uk/information-and-services/living-northern-ireland/emergencies-and-major-incidents>

¹⁸ <https://www.nidirect.gov.uk/articles/emergency-situations>

¹⁹ <https://www.30days30waysuk.org.uk/>

²⁰ <https://www.infrastructure-ni.gov.uk/articles/regional-community-resilience-group>

developing bespoke adaptations to the crisis communications that have seen significant uptake in the community, such as the Monaghan Alerts Scheme.

Notably, the presence and activity of bespoke agencies and groups such as the Regional Community Resilience Group (RCRG) in Northern Ireland represents a suitable degree of coordination in the management of crisis communications. The RCRG consists of over 40 different agencies including utilities, blue light responders, local and central government, education, housing, and a humanitarian aid charity. Information related to communication plans with these partners in an emergency is shared on a regular basis through an ezine publication, which asks partners to issue on their different social media channels. This publication was observed to have a wide circulation, with around 12 different articles relating to community safety in each edition. A recent example of this is a call to action for its members to share an image relating to avian influenza, which can be found below (see Figure 4.2.). Furthermore, the emergency communications plan has been endorsed by the group and represents a clear and distinct effort to attempt to centralise and maintain consistency in the communications efforts by the partners involved.

Figure 4.2: Dead wild bird online reporting tool for Northern Ireland - Emphasising a 'Whole of Community' approach.



(Source: DAERA online tool to report dead birds; see <https://www.daera-ni.gov.uk/services/daera-dead-wild-bird-online-reporting-tool>)

The tone of voice and approach to the campaigns also seem to be touched upon in certain examples (e.g. PIMG & A Local Impact Assessment Call - LIAC). However, a significant omission is the provision for a dialogic, or two-way communication stream. This could, in part, be

explained by responses not necessarily being essential metrics for success, such as is the case with Business-to-Customer (B2C) communication campaigns. However, one would wonder if the two bodies on each side are looking to enhance their communications approaches, and if some form of key performance indicators might involve the voice of the residents, where digital and social media might provide a key platform for enabling this.

This review builds on previous works (McClelland and O’Keeffe, 2014) to provide a clear understanding of the current landscape and potential areas for improvement. The main contribution from the review indicates that there are problematic dimensions related to information flow and channel management. In some cases, it was observed that media channel selections were well-intentioned; however, it was found to be difficult to cut through the clutter in a society characterised by information overload. Secondly, the review indicated the emphasis on efforts at a local level is more effective than larger regional initiatives. Our review of current activity also sheds light on the importance of local government involvement in emergency management programmes. This focus on the ground level is crucial for ensuring effective response and recovery efforts in cross-border regions.

4.2 Channels of Communication

As noted above, a broad spectrum of channels is currently being used in the public safety strategies. Arguably, there is a very diverse range of channels being used, which can, in some cases, contribute to information overload. However, strategic decisions have been made regarding the array of efforts to communicate safety and warning messages to necessary recipients.

Mainstream Traditional Media

A significant degree of effort in terms of communications initiatives is dedicated to mainstream media channels, such as via PIMG. This is not surprising as the methods and approaches to the use of advertising space on such channels are mature and a long-standing endeavour. Readership figures for such publications are easily accessible, and hence, the return on investment in such a media channel is viable and easily calculated, in contrast with digital and social media. Mainstream media, such as local news outlets and radio broadcasters, remains a valuable asset during crises. Their wide reach allows them to quickly inform a large audience about what's happening, keeping people aware and prepared. For example, the LIAC was observed to have a dedicated item on Media Messaging that indicates a conjunction between the Met Office & the Department for Infrastructure (DfI) to continue to issue messaging. However, the Emergency Planning Group (EPG) Public Information/Media Working Group is being tasked with continuing to share to aid wider awareness. This suggests that there is still scope for mainstream media channels to meet the needs of all stakeholders,

including those directly impacted, community and business representatives, staff, suppliers, elected officials, regulators, and the general public.

A collaborative working relationship with mainstream media outlets is deemed to be crucial for warning systems during natural disasters such as storms leading to flooding (Severe Alerts Leaflet), as well as to understanding safety protocols during such an event. Mainstream media also offers a platform for official announcements and updates, ensuring everyone receives consistent information from a trusted source, ideally controlling panic and the spread of misinformation, promoting a sense of calm during a stressful time. However, mainstream media is a communication tool with obvious drawbacks, in particular the time lag in response to events that are occurring at a fast pace where social media would be an obvious choice in crisis situations. In consideration of the audiences that may not be as digital savvy, it is clear that a combination of both traditional and digital media would be ideal for maximum effectiveness in crisis communications.

Subscription-Based Alert Systems

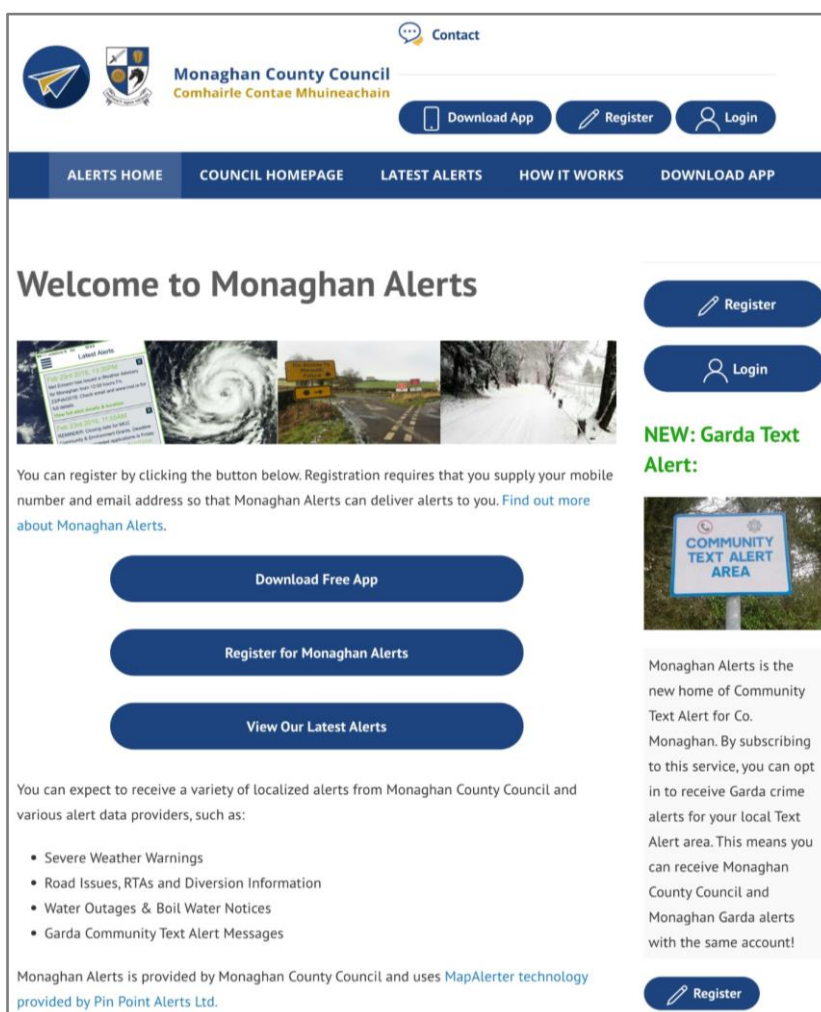
Widespread use of subscription-based alert systems was evident in the review of existing practices, in particular the Monaghan Alerts Scheme. Subscribers in local areas are targeted to sign up for such a system and, hence, choose to receive alerts relevant to their location or area of interest (see Figure 4.3.). This ensures that people only get the information they need, reducing confusion and panic during a crisis. Residents can subscribe to receive alerts for their specific town or wider area, instead of receiving generic updates for the entire region. Another point of appeal is the subscription system's prior opt-in function, which means people have already consented to receive these messages. Against a backdrop of the General Data Protection Regulation (GDPR) and other communications regulations frameworks, this opt-in provides additional layers of complexity for the providers of such services. However, with a subscription system, there is less chance of crucial messages getting lost in a sea of spam or unwanted notifications. It can also provide a two-way communications channel which is a valuable tool for both the sender and receiver of warning messages.

The Monaghan Alerts scheme is a positive example of a dedicated platform for subscriber alerts. It is a significant example of a unified system where users can receive all important alerts from one place. The customisable function is another asset whereby users can choose only the alerts that are relevant. Overall, the Monaghan Alerts scheme is a great way to stay informed about what's happening in your community and receive important alerts from the Gardaí and Monaghan County Council. Subscription-based systems can play an important role in public safety messaging but they cannot be relied upon exclusively, as they can only reach a proportion of the relevant community and are less likely to reach vulnerable groups than alternative communication channels. It is for these reasons that universal systems must be considered, in accordance with international good practice and EU legislation (see Chapter 3.3).

SMS - Mobile Messaging

The use of SMS and mobile messaging is a powerful tool. SMS boasts a very high read rate. Unlike emails that often get buried in crowded mailboxes, text messages are more difficult to ignore. They land directly on people's phones, with a preview often visible on the lock screen, grabbing attention during critical moments. This ensures vital information reaches those who need it most, fast. SMS cuts through disruptions. Unlike internet-dependent methods, text messages work even when data networks are down. This is crucial in natural disaster situations where infrastructure might be compromised (see also Chapter 3.3).

Figure 4.3: Homepage of the Monaghan Alerts subscription service.



(Source: Monaghan Alerts; <https://alerts.monaghancoco.ie/?ref=1/>)

Leaflet/Door-to-Door Communications

Leaflets and door-to-door communication can be valuable tools for crisis communication, particularly in situations where reaching a large audience quickly and directly is crucial. Firstly, they represent a long-stranding communication technique which has a highly targeted reach.

Unlike mass media, leaflets can be tailored to specific neighbourhoods or populations most affected by the crisis. This allows for targeted messaging that addresses local concerns and provides clear instructions relevant to their immediate situation. Secondly, door-to-door communications can be very effective in overcoming modern-day communication barriers. Leaflets can bypass potential disruptions to traditional communication channels like phone outages or internet failure. With regards to digital media, it is quite simple to ignore, or scroll past messages, whereas a tangible, physical item that conveys a message is quite powerful. However, leaflets and door-to-door communication have limitations. It can be time-consuming to distribute information this way, and language barriers might arise during face-to-face interactions.

The Fermanagh and Omagh District Council 'Preparing for Severe Weather' Leaflet is a notable example of a well-constructed leaflet being used to good effect. The leaflet contained key information, tips, and advice on what residents should do to prepare for severe weather. The leaflet has been promoted through Council social media channels and on the Council website. In 2018, the Council resident's magazine included a feature on Met Office weather warnings, including an explanation of the difference between Met Office and Met Eireann warnings. At that time a paper copy of the magazine was issued to every home in the District twice per year via Royal Mail. In recent years, the publication is now mainly promoted on Council social media channels with a small number of hard copies available to the public at reception areas of Council buildings²¹.

Digital and Social Media

It is not surprising that digital and social media platforms are transforming how Ireland and the UK tackle emergencies on both sides of the border. Social media (such as Twitter/X) can be a powerful tool for long-term preparedness campaigns, with Government agencies like Ireland's Department of Foreign Affairs (@dfain Ireland) and the UK's Met Office (@metoffice) already leveraging these platforms to share educational content on emergency preparedness tips, evacuation plans, and public safety information. X and Meta Groups have become crucial for disseminating critical information during emergencies. This real-time information sharing across borders allows citizens on both sides of the border to stay informed and make informed decisions.

The #30days30waysUK²² campaign is a notable example of the strategic use of digital and social media. The crux of the campaign is that 'September is Preparedness Month', which aims to boost personal and collective resilience and preparedness through daily themed hazard information based on the National Risk Register (NRR), resources links and activities. Users were encouraged to share activities on each day of the month via social media which

²¹ Personal communication with Fermanagh and Omagh District Council.

²² <https://www.30days30waysuk.org.uk/>

effectively disseminated the range of public health and awareness resources. The campaign uses positive psychology, humour, and gamification to engage and inspire the public to “get equipped, make a plan, be informed”. This proactive approach can help citizens from both countries be better prepared for future emergencies.

Furthermore, social media has been shown to foster a sense of community during emergencies (e.g. Leong et al. 2015). Meta groups dedicated to specific regions along the border can serve as platforms for residents to share information, request assistance, and offer support to one another. For example, the Facebook group "Mourne Mountain Rescue" plays a vital role in search and rescue operations in the mountainous border region, with members from both sides of the border collaborating and sharing crucial updates during emergencies.

4.3 Areas for Further Exploration

The review of existing practices highlights specific challenges related to communication protocols and resource allocation in the cross-border region. Highlighting these specific issues can guide more targeted solutions. Fleshing out actionable steps in each of these areas can provide a roadmap for implementing more effective cross-border emergency planning. Further work in this area might consider investigating responses to previous campaigns both through digital analytics to uncover usability issues. End-user insights could also be gathered to pinpoint any positive or negative reflections on the messaging exchange and to illustrate what may encourage users to continue to use the service going forward. (e.g., incentives, sharing imagery competition). Tools such as Ushahidi (<https://www.ushahidi.com/>) allow users to share geo-tagged information about emergencies, creating a real-time picture of the situation. This can be invaluable for emergency responders in both Ireland and the UK to coordinate resources and target their efforts effectively. For instance, during the 2017 wildfires in Portugal, Ushahidi was used to map affected areas and coordinate relief efforts, a model that could be replicated for cross-border emergencies on the island of Ireland. Considering the shift towards visual and video content in the modern marketplace (e.g., TikTok, YouTube), it is reasonable to suggest that short-form video content may be the dominant media format going forward and that a strategic plan for this type of dissemination will be required. In doing so, the traditional approaches to messaging through text may also require adaptation.

4.4 Content Marketing

It is also noted that a rudimentary application for the Content Marketing techniques²³ was being applied. This innovative approach is being celebrated in advertising and marketing arenas and may be useful for the development of future strategic decisions. Content marketing is often used for “brand building” and engagement and can be a powerful tool for

²³ The Content Marketing Institute <https://contentmarketinginstitute.com/>

effective communication. The following five pillars of content marketing could be worth considering moving forward, building upon the review of existing practices. Working on the presumption that the emergency planning groups such as the RCRG & PIMG, the same principles could apply in terms of their communication strategies. Furthermore, by using the tenets of the content marketing pillars, it could support a refinement of the messaging strategy, across the variety of channels currently being used, and channels that may be adopted in the future.

1. ***Building Trust Beforehand:*** By consistently creating informative and transparent content, brands establish themselves as reliable sources. It could be feasible that cross-border agencies could produce sets of blog posts, infographics, and even social media explainers addressing potential risks. These can build trust with audiences even before a crisis hits. When a crisis unfolds, established trust encourages audiences to seek out and believe information from the producer of the message.
2. ***Proactive Communication:*** Content marketing allows for proactive communication during a crisis such as blog posts, website updates, and social media announcements to address the situation head-on. Clear and concise explanations of what happened, what steps are being taken, and how it affects the public can calm anxieties and prevent the spread of rumours.
3. ***Transparency and Accountability:*** Content marketing fosters transparency. Cross-border agencies and groups could use a variety of content formats to share updates, data, and behind-the-scenes glimpses of their response efforts. This transparency demonstrates accountability and builds trust during a time of high scrutiny.
4. ***Humanisation:*** A crisis can feel impersonal and overwhelming. Content marketing can be used to humanise the agency/groups' response. For example, video content featuring responders working to resolve the situation or stories showcasing acts of customer support can connect with audiences on an emotional level, fostering empathy and understanding.
5. ***Long-Term Reputation Repair:*** The road to recovery after a crisis is long. Content marketing can be instrumental in long-term reputation repair. By consistently creating informative and helpful content that addresses the concerns raised by the crisis, can demonstrate a commitment to learning and improvement. This can help rebuild trust over time.

5 COMMUNITY PERCEPTIONS OF HAZARDS AND EXISTING COMMUNICATION

5.1 Introduction

As a core component of this study, the research team undertook primary research in both case study locations (Clones and Lisnaskea) in October 2023. In both towns, focus groups were conducted separately with members of public authorities and civil society organisations (Groups 1 and 2) and engaged citizens (Groups 3 and 4). The focus groups were facilitated by the research team with the assistance of Monaghan County Council and Fermanagh and Omagh District Council. In Clones, Group 1 was attended by 14 members of civil society groups, including An Garda Síochána, the Fire Service, local councillors, community groups, and social media administrators of local messaging groups and news outlets. Group 3 was attended by 4 members, including two representatives from Age Friendly Ireland representing the views of older people, a representative from the local Public Participation Network (PPN) and a local business owner. In Lisnaskea, Group 2 was attended by 8 members, including Fermanagh and Omagh District Council, a local community worker, Northern Ireland Fire & Rescue Service (NIFRS), the PSNI, the Royal National Lifeboat Institution (RNLI), Red Cross and the Policing and Community Safety Partnership (PCSP). Group 4 included representatives from local youth groups, the Gaelic Athletic Association (GAA), paramedics, a local councillor, and community dwellers who represented the views of older people. The focus groups were recorded with the permission of participants, transcribed and anonymised. Although the focus group discussions were guided by the facilitator through a set of questions prepared in advance, the team were keen to maintain a natural flow of conversation and allow interaction to develop within the group. The focus groups were, in each case, characterised by active and lively engagement.

5.2 Social Media and Other Forms of Communication

The focus group discussions highlighted the potential pitfalls of an over-reliance on social media for public safety messaging. Where commercial platforms are used (e.g. Facebook, Twitter/X), social media accounts must be kept active with relevant and informative content so that they attract a significant number of followers and do not get lost in the flood of messages received on a daily basis. There is currently no specific mechanism for ensuring that messages from public sector bodies are prioritised above other content. The Monaghan Alerts scheme is a positive example of a dedicated platform. It has, however also, faced difficulties in recruiting and maintaining subscribers. A change in the provider of the platform in early 2023 meant that all existing subscriptions were lost and people needed to be encouraged to sign up again, resulting in a lower number of active subscribers. A number of focus group

participants expressed concerns that social media-based messaging was not reaching all groups of society, and that, in particular, older people are less likely to be reached by social media. On the other hand, social media may be an effective tool in reaching migrant communities with low levels of English, as short, written messages can be easily translated. In some cases, online community messaging boards (e.g. on Facebook) are recognised as an important source of reasonably reliable information. They are, however, time-intensive in their upkeep and often reliant on a small number of individuals volunteering their time. Effective public safety messaging must be 24/7. An incident can happen at any time. While community messaging boards can play an important role in both the preparation and response phases, they should not be viewed as, or become, by default, the primary source of information during and in the immediate aftermath of an incident. It must also be noted that the social media landscape itself is becoming increasingly segmented and diverse with a wide range of different service providers, often serving distinct demographics or social groups. The case of Twitter/X shows how in a short space of time, the status and reputation of a social media provider can shift dramatically.

Effective public safety messaging requires people to trust that information is trustworthy. In the current media landscape, it is challenging for one organisation or public authority to control the narrative. Different versions of the same incident or risk may be communicated and distributed via multiple channels. In many cases, the original source of information may be difficult to identify or verify. Focus group participants noted that there might be a time lag between information reaching the public via social media channels and official messaging being sent out precisely because of the need for verification. This can potentially lead to confusion, distrust of official sources or complacency. These issues highlight the need for a quick response but also the need for official public safety messaging to stand out from the crowd and be clearly identifiable as such. Participants also noted specific challenges associated with irresponsible and insensitive journalism (e.g. reporters gathering at a school where post-incident counselling treatment services were offered to young people, effectively creating an additional barrier to those young people availing of the services provided or insensitive headlines and images in tabloid newspapers adding to post-incident trauma).

Cell broadcast systems (such as UK Emergency Alerts) present a potential alternative to a reliance on social media. A focus group participant referred to their personal experience receiving a cell broadcast message while travelling in North America. They expressed surprise at how quickly people responded to the alert and altered their behaviour. A number of participants did not consider cell broadcast (CB) messaging as an option in Ireland due to EU data protection regulations. This, in fact, is misleading as CB does not require public agencies or service providers to collect or store any information from message recipients (See Chapter 3.3 of this report). Participants also pointed to the value of more traditional means of communication. Where circumstances allow (e.g. highly localised flood risk), door-to-door communication may, for example, be an effective strategy.

5.3 Community Engagement

A central theme of the focus group discussions was the relationship between public safety messaging and community engagement. Participants across each of the groups stressed the importance of community engagement for effective public safety messaging. The task of public safety messaging should not be separated out from the broader community engagement work of local authorities and first responder services.

In the preparation phase, building trust across all sections of a community is essential. For this, it is important that local authorities have a good working knowledge of the full spectrum of community organisations active in their area, ideally based on interpersonal contacts. These might include, for example, residents' associations, community alert areas, sports clubs, scouts, music groups, local history societies, or religious groups. Participants discussed a perceived need to provide dedicated information resources for local community organisations. During and in the immediate aftermath of particular incidents, it may be possible and appropriate to allocate specific tasks to community organisations. Here local authorities can play an important role as coordinators and facilitators, ensuring good communication and cooperation among community organisations and volunteers to enable an effective response. The need for cultural sensitivity in emergency response (e.g. provision of space for prayer mats in emergency accommodation) was raised as an issue in one focus group. It was suggested that there is a need for managing expectations of what can reasonably be provided in an emergency situation while being sensitive to the diverse needs of a community.

Focus group participants also noted that local elected representatives can potentially also play a significant role, as a go-between or 'ear on the ground' establishing links ensuring key messages reach all sections of the community (see ICLRD, 2023). They can also provide a channel for feedback between the community and public authorities, which may be particularly relevant in the case of prolonged incidents. Participants discussed the pivotal role of local leadership in times of crisis. In particular, empathetic leadership based on relations of trust can provide guidance to a community under stress (see Scully and Shaw, 2022). Leadership can come from senior officials, elected representatives and/or other trusted sources in the community. This aligns well with a 'whole society approach' to emergency management (see Chapter 1.2). It was, however, also noted by a number of participants that maintaining the interest of local community groups can be challenging. This is particularly the case with regard to dedicated community fora, such as local resilience groups in Northern Ireland. Following an incident, community interest in emergency preparedness may be strong, but maintaining momentum is more difficult. Indeed, personal experience with or awareness of past events is a key factor in how individuals and communities perceive specific risks and their response to those risks (see Chapter 3.2). More generally, it was noted that the level of engagement in community organisations and volunteer activities is perceived to

be declining, as many people are working longer hours, commuting longer distances or have a preference for individualised free-time activities.

Whereas a 'whole society' approach to emergency management has evident advantages, it also brings with it certain risks. In particular, there is a risk, articulated by some focus group participants, that too high a burden of responsibility might be placed on community organisations or a small number of engaged individuals. One example concerned the provision of family care services in the aftermath of a traumatic incident. Another different example referred to by participants related to the erection of warning signs on flood-prone rural roads and the deployment of sandbags by community groups. If warning signs can be put in place by local individuals or organisations, this may contribute to a timely and effective response. Should, however, an accident occur due, for example, to local volunteers failing to erect signs at the correct location or on time, questions might arise as to the division and assignment of responsibilities. In other cases, public authorities (e.g. local authorities or An Garda Síochána/PSNI) might be constrained in the information they can give out or the role they can play due to legal frameworks under which they are required to act, particularly where there is indication of criminal activity. In such sensitive cases, community organisations may play important roles as intermediaries that vulnerable individuals might approach in confidence. The above examples illustrate the need for maintaining a clear balance between formal statutory and informal community roles and responsibilities. Both community organisations and public authorities should be aware of their actual and potential roles and responsibilities in all three phases of emergency management.

5.4 Agency Cooperation and Cross-Border Coherence

Focus group participants indicated that cross-border communication in emergency risk management is effective. Interpersonal relations rather than formal protocols are viewed as key to ensuring coordinated and efficient responses at both inter-agency and cross-border levels. Networks of contacts among staff at agencies and authorities in both Ireland and Northern Ireland have become well-established over the past two decades. Participants spoke of being able to simply 'pick up the phone' to communicate with their counterparts across the border as necessary. These networks of contacts have developed at both strategic and operational levels through the work of the Cross Border Emergency Management Group (CBEMG) but also through practical engagement at a very local level and experience gained through cross-border incidents in the past. The focus group discussions revealed differences in governance culture and institutional arrangements between Ireland and Northern Ireland. In particular, there would appear to be a stronger focus on inter-agency coordination through committees and working groups in Northern Ireland than in Ireland. This is associated with an emphasis on a perceived need to ensure all agencies can 'speak with one voice'. It may reflect an awareness of Northern Ireland as a divided society, where common narratives or

perceptions cannot be assumed. From a cross-border perspective, an awareness of differences in governance cultures can aid in understanding specific modes of working and what might be possible in the other jurisdiction. Networks of interpersonal relationships can help to overcome some of the difficulties associated with differing legislative and policy frameworks, classification schemes²⁴, divisions of responsibilities and resourcing. Inter-agency communication on environmental issues (e.g. water pollution incidents) is perceived to be less well-established, particularly on a cross-border basis. This may be in part due to the need for technical expertise, with different specialists involved, depending on the issue at hand. Whereas networks of interpersonal contacts can provide a strong foundation for effective cross-border working, a balance must be achieved to ensure that communication is not dependent on a small number of key individuals. Lists of contacts and alternative contacts should be readily accessible to ensure that effective and coherent communication is maintained, for example, should individuals in key positions be on leave or otherwise unavailable.

Focus group participants noted that a lack of cross-border coherence in public safety messaging has impacted on the level of trust people have in public authorities. In particular, during the COVID-19 pandemic, differences in regulations and overarching policy narratives impacted on how key messages were perceived in the border region. It was suggested people are quick to spot apparent inconsistencies and contradictions. Similarly, a lack of consistency in weather warnings on either side of the border is perceived to lead to confusion and, at times, complacency. Some of these issues may be resolved as systems become more harmonised (e.g., the planned introduction of an impact-based warning scheme in Ireland). Joint cross-border emergency management demonstration exercises may be one effective means of increasing public trust in the cross-border coherence of emergency responders (see Chapter 3.5.).

In addition to the challenges of cross-border coordination and coherence, effective emergency management in the border region also faces challenges due to infrastructural deficits and the potential for gaps in service provision. Focus group participants highlighted the difficulties associated with unreliable mobile telephone networks in the border region and the necessity for people to be able to reliably contact the emergency services in cases of emergency without leaving their homes. The focus group discussions also revealed a certain lack of awareness or interest in incidents occurring in close proximity but in the other jurisdiction. It is apparent that despite the high density of everyday cross-border interaction, the phenomenon of 'borders in the mind' continues to be very relevant today. This should be borne in mind in relation to cross-border incidents. Public authorities cannot assume that an

²⁴ The weather impact risk matrix Met Éireann currently uses is a hybrid threshold/impact-based warning system. There are three warning levels, yellow, orange and red. The UK Met Office, on the other hand, has since 2011 moved to an impact-based warning system which means that weather is warned for when it is deemed to have potential impacts on people.

incident will be perceived similarly, and generate a similar response on both sides of the border.

6 MANAGING AND COORDINATING CROSS-BORDER EMERGENCY MANAGEMENT AND PUBLIC SAFETY MESSAGING: PRACTITIONER PERCEPTIONS AND REFLECTIONS

6.1 Introduction

To address the challenge of understanding public safety messaging and effective emergency response management in the cross-border region, a workshop was conducted with Cross Border Emergency Management Group (CBEMG) member organisations in December 2023. The objectives of the event were to 1) Better understand existing practices of local public safety messaging, 2) Assess the extent of cross-border coherence, 3) Learn from international good practice, and 4) Develop recommendations for improved cross-border public safety messaging.

A mixed-methods approach was employed to elicit relevant responses from the workshop participants. Firstly, evidence that emerged from the focus groups held in Clones (Ireland) and Lisnaskea (Northern Ireland), respectively, was presented for discussion (see Chapter 5). During the CBEMG workshop, the research team sought to explore the participants' perceived probability of a range of large-scale scenarios that would necessitate cross-border collaboration. The participants were divided into three groups, with each group addressing one of three specific scenarios. This discourse focused on identifying the principal response agency, categorising the threat, determining what other actors would be engaged in, and determining who would engage in communications. Finally, overall recommendations were generated by participants to advance best practices in cross-border collaboration and effective response to major incidents. These aforementioned activities and their findings are now summarised.

6.2 Public Service Messaging and the Information Society

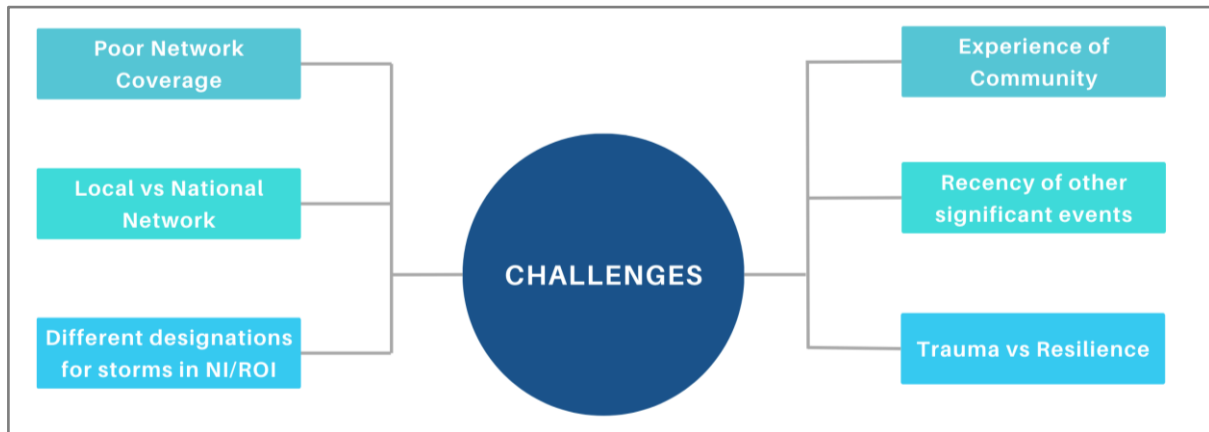
Initial discussions based on a presentation of learnings from the focus group interactions focused on the following questions: ***Information Society and the role of the media and social media – How Effective is it? How important is community engagement? And what is the role of cross-border coherence in messaging?*** The key responses to each question are now addressed in turn.

Effectiveness

The effectiveness of media, social media and messaging using SMS, for example, generated much discussion in the focus groups (see Figure 6.1). For example, first responders spoke to these challenges of poor network coverage for Global System for Mobile Communications

(GSM) and 4G. While local networks are faster at getting information into the public domain, events may require updates into the wider public domain, for example, into national networks for incidents like the recent flooding in Newry and Downpatrick.

Figure 6.1: Challenges in information sharing in public safety messaging.



(Source: Authors)

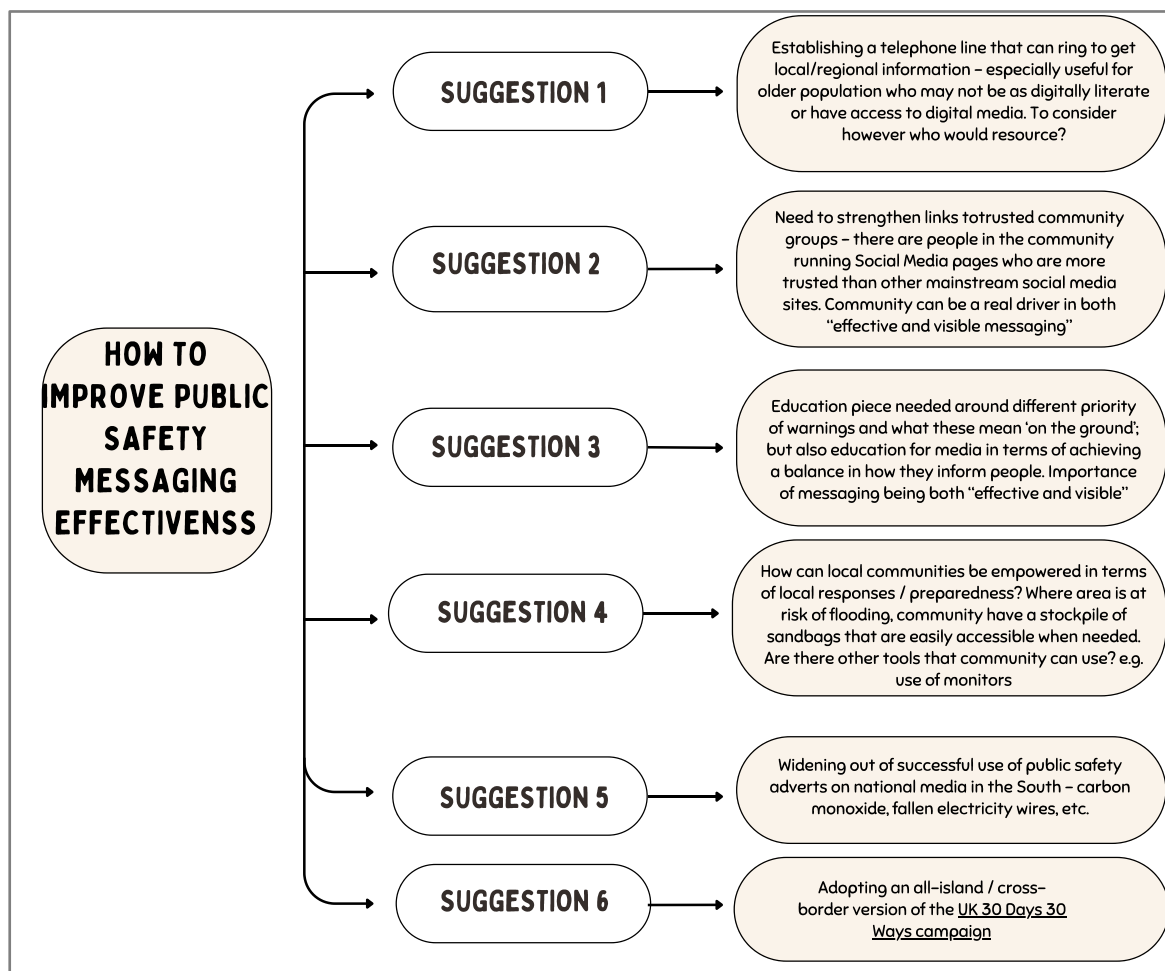
Furthermore, the receiver of the message has to be considered. What was their prior experience of large-scale impactful events, and what emotions did they experience (e.g., potentially traumatised community)? Or has the community successfully overcome a major event and now possesses resilience? Failure to recognise or recall past incidents can lead to the public not heeding warnings. A further challenge is the lack of engagement with existing resources. For example, the Department for Infrastructure (DfI) website has flood maps, but it is difficult to assess whether these are used by the wider public. Differences in designations for storm/wind warnings in Northern Ireland and Ireland occur and have to be considered as extreme weather events don't respect political boundaries. In the next step, the participants generated suggestions on how to improve the effectiveness of public safety messaging (See Figure 6.2).

Community Engagement

Several key challenges relating to the value of community engagement were identified in the focus groups, and these elicited further discourse in the workshop (See Figure 6.3). The importance of community knowing how to engage with local communities was emphasised. The reach of communications due to differences in digital literacy across demographics was believed vital to consider. The potential of power outages impacting communications networks was also worthy of deliberation. The booklet prepared by Monaghan County Council Fire Service will go out to 29,000 households across the county, following the distribution of a shorter brochure earlier this year. This approach was highlighted as best practice, with the booklet focusing on personal and community resilience. It will also be available as an e-booklet and linked to Google Translate to promote access in diverse communities. The

importance of having hardcopy – especially for older adults and the more vulnerable in society was viewed as critical.

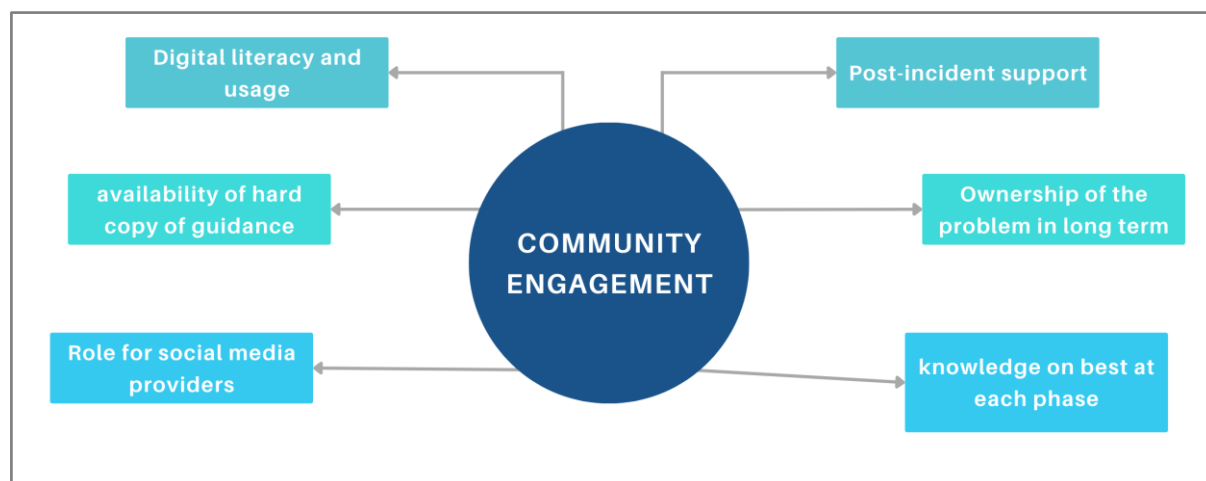
Figure 6.2: Proposed suggestions to improve information sharing in public safety messaging.



(Source: Authors)

At the focus groups in October 2023, it was highlighted that older persons feel pushed into using digital/electronic when not completely ready to make this switch fully. Reference was also made to a recent Age Friendly talk in Monaghan, where it was noted that there is a perception that older persons are more digitally literate than they are. Additional challenges were noted around the post-incident stage, as well as the lack of support for the community. For example, it became clear following the fatal crash in Clones during the Summer 2023 that gaps existed in identifying which agency was responsible post-incident in the medium to long term. The role of social media providers in prioritising information during a critical incident was also discussed.

Figure 6.3: Challenges in community engagement in public safety messaging.



(Source: Authors)

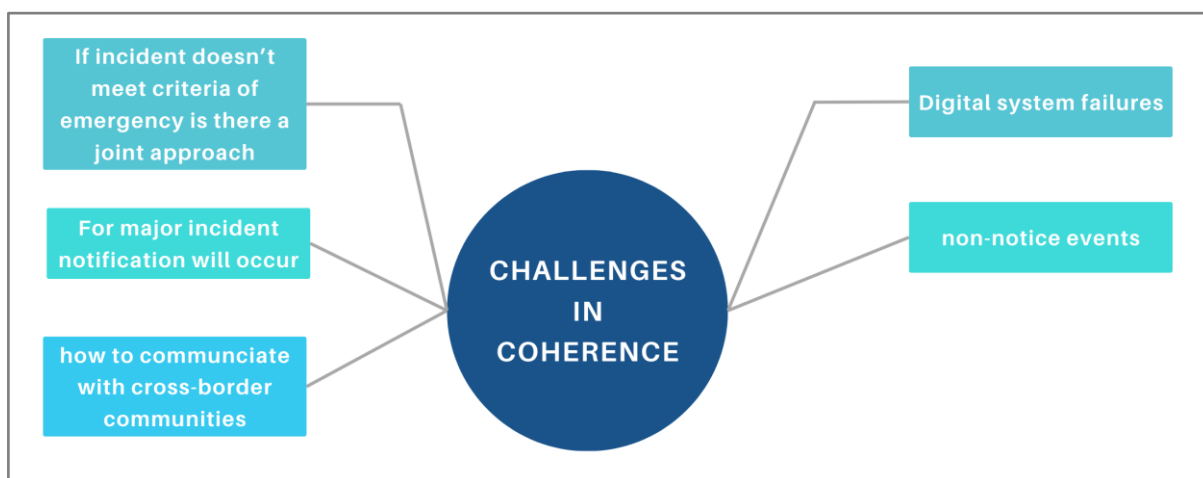
Proposed suggestions focused primarily on the development of booklets in Ireland which are part of the preparedness strategy. As part of an integrated strategy employing multiple ways of connecting to people, the booklet will be disseminated through age-friendly talks, schools, and community groups. Insights emerged on the extent to which the booklet needs to be seen as a vehicle to do other things and embedded within a community-based story. Other suggestions related to the promotion of the booklet in advance of its release – via video, newspaper/radio campaigns, etc, as the ‘local’ focus of the booklet is its ‘hook’ for the community.

Cross-Border Coherence

Next, the discourse centred upon cross-border issues. For example, in the case of an incident close to the border – not classified as an emergency – who takes the lead? In Ireland, it will be the local authority, but it is not clear if this is mirrored in Northern Ireland. There is an existing cross-border protocol and excellent cooperation if there is a major incident on one side of the border, which is initiated with notification to the relevant responsible agency. If both sides need to be involved in the response, then it will always likely be led by the local government in Ireland, with the lead response in Northern Ireland being determined by the guidance outlined by the NI Civil Contingencies Framework. However, if there is an incident at a school close to the border, but the catchment is not cross-border, then the incident will not be classified as a cross-border incident. A key issue to consider is identifying the most effective way to communicate with cross-border communities (see Figure 6.4.). Is it a form of universal messaging? Can a centralised system pick up local nuances? Can a centralised system be informed by local people on the ground? Should emergency alerts go to all phones (unless opt-out) as happens in some EU member states? For example, Met Eireann has an early warning sign-up facility. The reliance on digital messaging leads one to question what happens when these communication systems fail. Furthermore, how do you communicate

effectively when an event happens quickly or where there is no long lead-in warning – what is termed a (relatively short lead-in period) no-notice event (e.g. Storm Debbie)?

Figure 6.4: Challenges in coherence in public safety messaging.

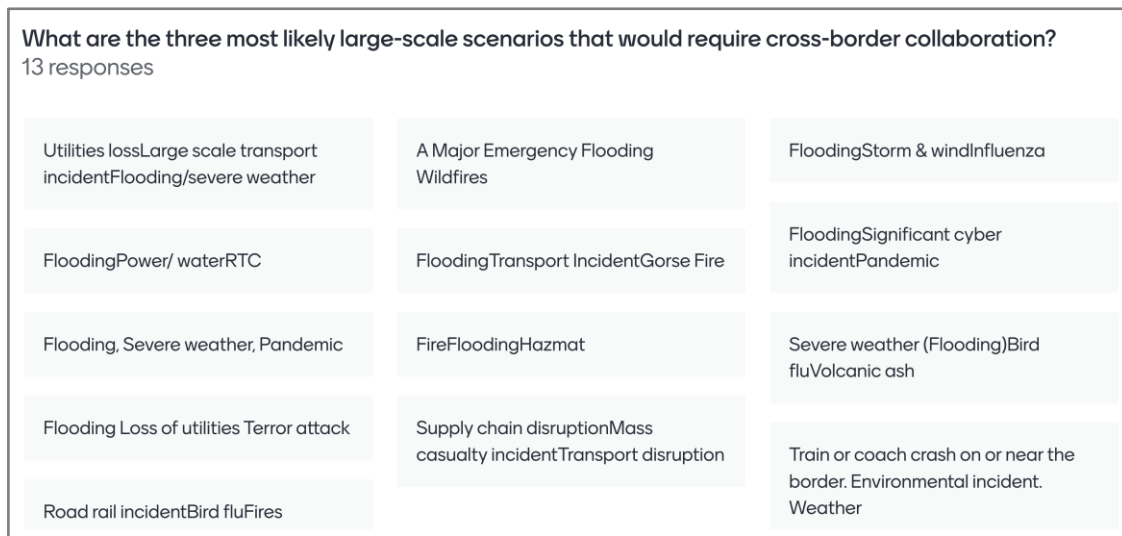


(Source: Authors)

6.3 Testing Scenarios

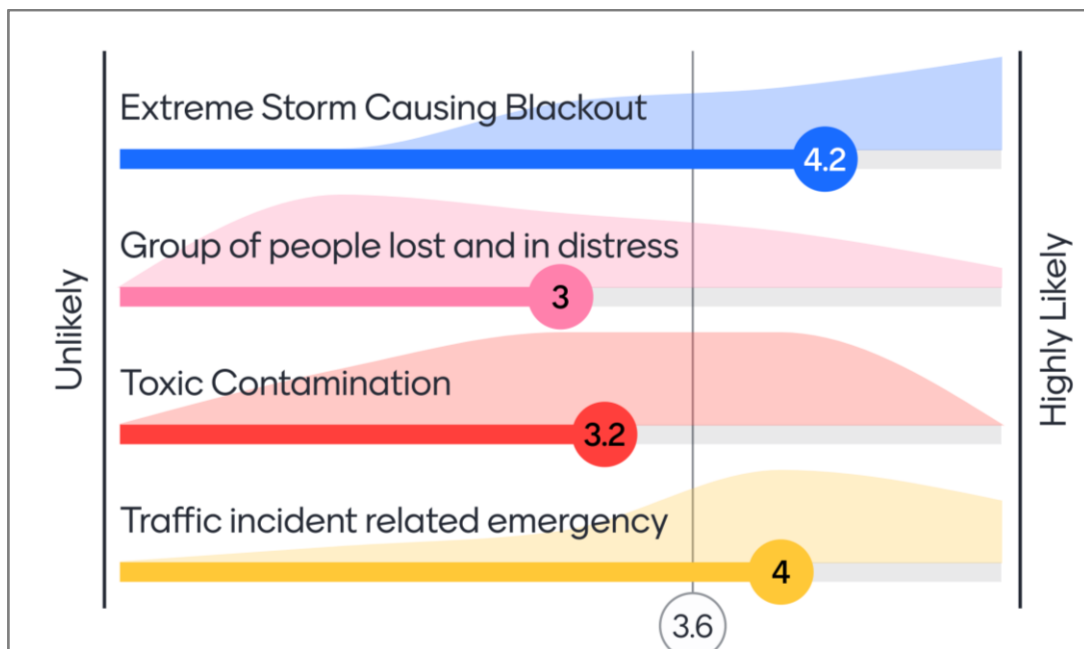
During the workshop, Mentimeter software was used to assess the perceptions of participants regarding both the three most probable large-scale scenarios (see Figure 6.5) and the perceived probability of occurrence of the four specific scenarios that require cross-border collaboration (see Figure 6.6). Weather-related disasters were most commonly cited, with consequences including flooding and high winds. Transport incidents, gorse fires, cyber incidents, chemical spills and zoonotic diseases (e.g. bird flu) were also noted.

Figure 6.5: The participants' responses on the three most probable large-scale scenarios that would require cross-border collaboration.



(Source: Authors)

Figure 6.6: The perceived probability of four specific scenarios based on workshop participant responses.



(Source: Authors)

Responses suggested that the three scenarios developed for the workshop were relevant based on the ratings of the perceived likelihood of their occurring. A scenario on a traffic incident-related emergency was not probed because this issue had occurred recently in the case-study area. In order to avoid any biases from recent events, the research team generated three novel scenarios (see Figure 6.7). Further elaboration on the three scenarios was provided during the workshop; thus adding to the realism of each scenario.

Figure 6.7: The three scenarios elaborated on during the workshop.



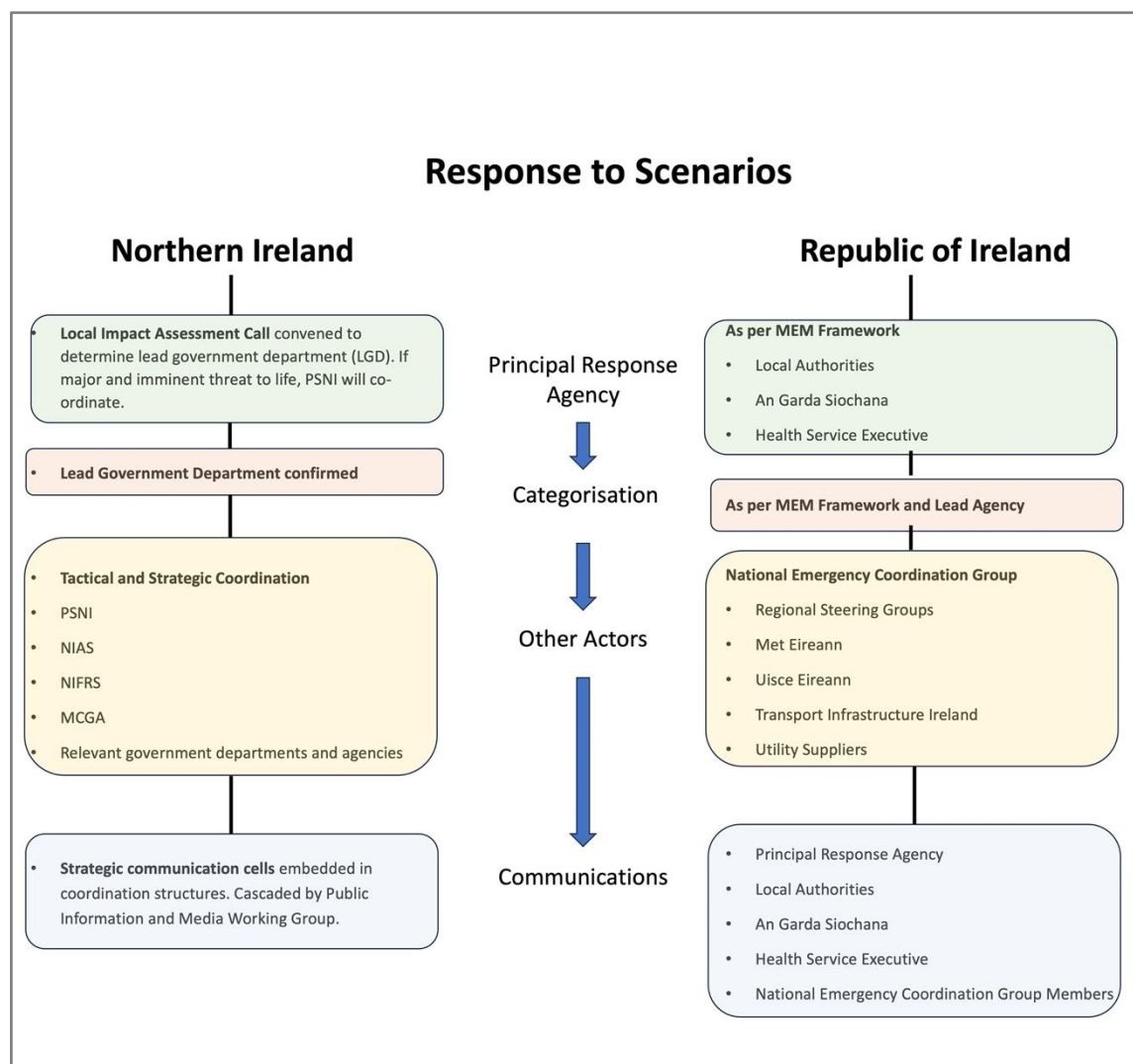
(Source: Authors)

6.4 Conclusion

One of the challenges that was apparent from the participant responses was the difference in resourcing to address the problems raised in each scenarios (see Figure 6.8. and Figure 6.9). In summary, local resilience was perceived to be more robust in Northern Ireland than in Ireland. There is scope here for more transboundary learning and also the need for additional

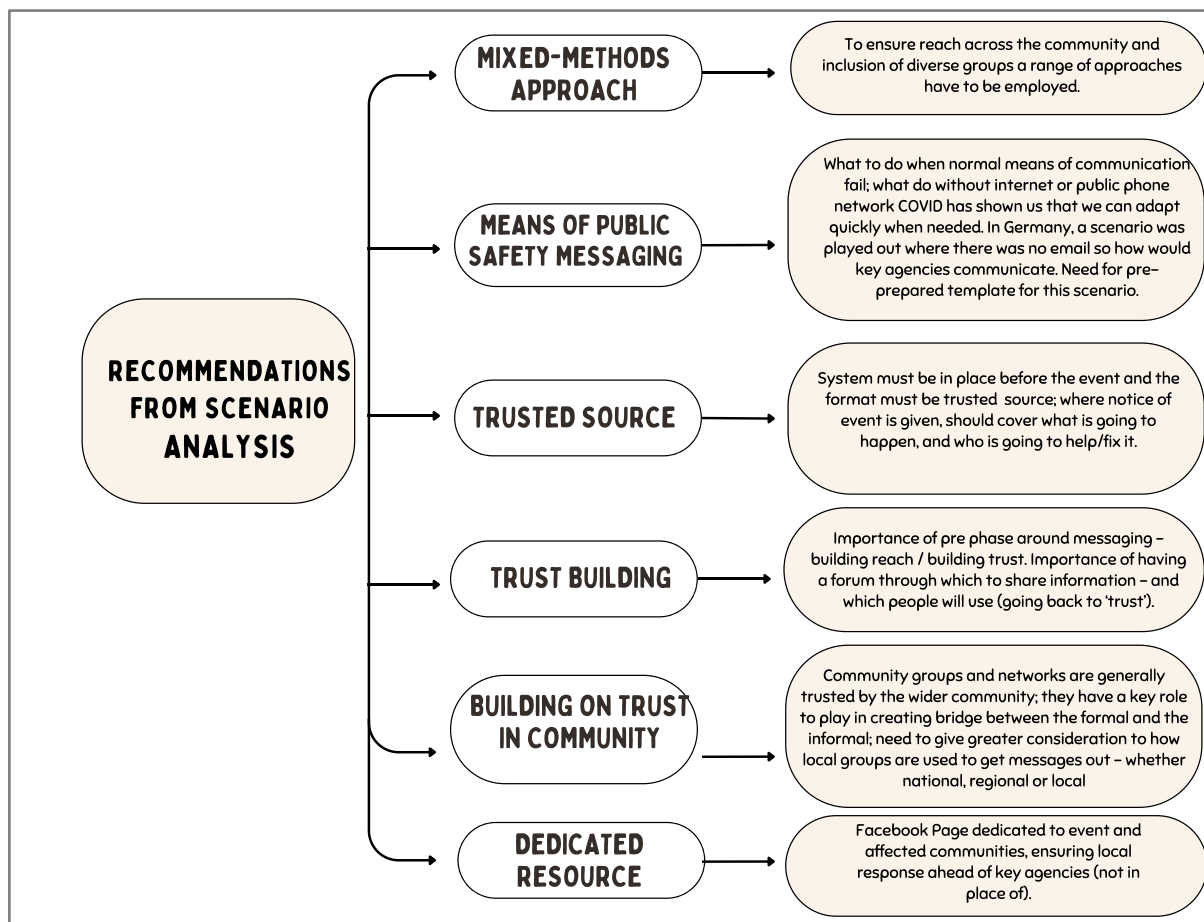
resourcing by the Irish Government and cross-border bodies. Coherence in communications on cross-border incidents needs significant investment and commitment from all agencies (see Figure 6.10). Over two decades ago, there was strong coherence during the Foot and Mouth outbreak but not during the COVID-19 pandemic. This requires further examination and future planning using likely scenarios. And finally, the importance of capturing the ‘lived experiences’ of individuals across the communities cannot be overstated. This approach can bring the challenges of dealing with incidents on the border to life, and such narratives should be visible on relevant websites (e.g., local authorities). These stories are tools with which to reach people across communities and raise their awareness in an effective way, promoting cross-border resilience to major incidents in both Ireland and Northern Ireland.

Figure 6.8: Summary of responses relating to key factors across the scenarios.



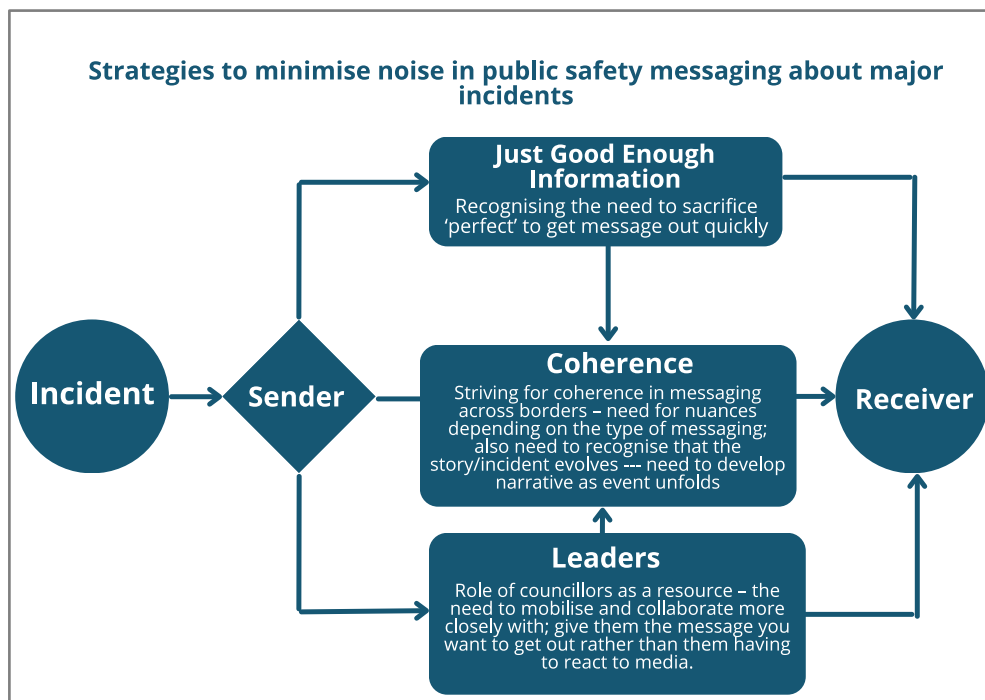
(Source: Authors)

Figure 6.9: Summary recommendations from the workshop scenario analysis.



(Source: Authors)

Figure 6.10: Consensus on key strategies to minimise noise in public safety messaging.



(Source: Authors)

7 RECOMMENDATIONS AND ACTIONS

No.	Recommendations and Actions	Lead Stakeholders
1.	<p>Building on the existing strength of community engagement, we recommend the adoption of a ‘whole society’ approach to emergency management at the local level. This implies recognising the roles of community organisations and engaged citizens as partners in all phases of emergency management. From this perspective, effective public safety messaging builds on active relations of trust established between statutory bodies, community organisations and citizens.</p>	<p>LAs, emergency services, community organisations</p>
2.	<p>The benefits of a whole society approach, notwithstanding, public authorities must be aware of the inherent risks that too high a burden of responsibility may (inadvertently) rest on the shoulders of community organisations and/or a small number of engaged individuals.</p> <p>Action:</p> <p><i>Develop a crisis communications strategy outlining the roles and responsibilities of statutory bodies with respect to public safety messaging in preparation for, response to and recovery from crisis and the opportunities and challenges of engaging with community organisations as a communications strategy.</i></p>	<p>LAs, emergency services, Central Government²⁵</p>
3.	<p>Community leadership is critical to transitioning from the incident response to the recovery phase. Empathetic leadership based on relations of trust can provide guidance to communities under stress. Leadership can come from senior local authority officials, elected representatives and/or other trusted sources in the community. Public authorities should consider who can speak best on behalf of the community and in what capacity.</p> <p>Action:</p> <p><i>Develop a dedicated training programme in crisis communications for leaders engaged at all levels of emergency management on the island of Ireland, drawing on the principles of place-based leadership, and strategic emergency management in the recovery phase – Build Back Better (BBB).</i></p>	<p>LAs, community organisations, elected representatives, Central Government</p>

²⁵ Note ‘central government’ refers to all government departments and their agencies, at national level in Ireland, and at regional level with respect to Northern Ireland.

4.	<p>In building societal resilience, the role of emergency services and local authorities in public safety messaging is twofold. Firstly, they have a responsibility to ensure that the public has the information they need to respond to situations as they arise. In many cases, this may involve passing on national-level messages and warnings through local communication channels. Secondly, local authorities and responding agencies have a responsibility to engage with their communities based on an understanding of how incidents are perceived locally and how effective responses may be mobilised.</p> <p>Action:</p> <p><i>Establish systems to ensure that technical information, communicated at an inter-agency level, is translated into language and formats that are understandable and accessible to the general public. Local authorities may require additional national resourcing for training/trainers in such areas as designing and implementing local alert systems (see Recommendation 6 below), media management, etc. to fully realise both of these tasks.</i></p>	Central Government, LAs, emergency services
5.	<p>Local authorities are often required to negotiate a challenging media landscape (traditional print and social media) in times of crisis. In some cases, multiple narratives (both factual and non-factual) of particular incidents may compete for attention. Where irresponsible and/or unethical journalism poses a problem, public authorities require professional guidance to develop effective responses.</p> <p>Action:</p> <p><i>Develop a training programme, aligned across jurisdictions, centrally resourced and delivered locally and involving all those associated with information dissemination in preparation for, response to and recovery from crisis. This training is critical to addressing the challenge of multiple narratives. This could, for example, take the form of a scenario exercise (see Recommendation 14 below) with a focus on messaging.</i></p>	LAs, emergency services, elected representatives, media outlets, Central Government
6.	<p>Effective public safety messaging at all levels, from local to national, must be universal. Communication channels must be established to ensure that all groups in society are reached, including the elderly, people with disabilities, and those with limited English language fluency.</p> <p>Action:</p> <p><i>Advance the national Cell Broadcast System to provide a modern public warning system and to meet the requirements of the EEC Directives. Consideration should also be given to supplementing this with location-based SMS. International experience indicates that location-based SMS at a local level can complement a national cell broadcast system.</i></p>	Central Government, LAs, Emergency services

7.	The establishment of a dedicated communication system should be progressed to provide local and regionally specific information on current incidents and risks in accessible language. This should be considered a key means of providing factual information to older people and others who may not be online.	Central Government, LAs, emergency services
8.	Effective emergency management communication depends on citizens' ability to reliably contact emergency services by telephone from their homes or places of work . Public investment is required to improve mobile phone network coverage in the border region.	Central Government, LAs, mobile phone providers
9.	<p>Local authorities should consider producing a joint preparedness publication (e.g. brochure / booklet) with key contact information for emergency response agencies. The publication should provide information on potential risks in the cross-border region where relevant, making reference to events that have occurred in the past (e.g. flooding, wildfires). It should be distributed to community organisations in the cross-border region. Current work by Monaghan County Council Fire Services provides an example to follow here.</p> <p>Action:</p> <p><i>Coordinate the work of local authorities in the cross-border region, through the CBEMG, to develop bespoke joint preparedness publications – ensuring consistency in approach as relevant and using the template developed by Monaghan County Council, and considering other good practice, to provide a guiding framework.</i></p>	LAs, CBEMG, Central Government
10.	<p>(1) Central Government, Local authorities and emergency services should establish guidelines to ensure that short messages to the public contain all the relevant information in as concise a manner as possible. It is possible to learn from international good practice in this regard (see Australian Disaster Resilience Handbook, Chapter 3.4).</p> <p>Action:</p> <p><i>Consider, through the CBEMG, the development of coordinated public safety messaging guidelines that will move towards enhanced consistency by local authorities in the content of cross-border messaging to the public on the same event.</i></p> <p>(2) Additionally, enhance coordination at the strategic level to move towards greater consistency in public safety messaging on an island of Ireland basis.</p> <p>Action:</p> <p><i>Define formal communication pathways to be co-designed and agreed at a national/regional level. This will include agreement on common definitions and terminology in public safety messaging.</i></p>	LAs, emergency services, CBEMG, Central Government

11.	<p>Consideration should be given to the optimum methodology for ensuring clarity when a severe weather warning is issued, with the aim of reducing the potential for confusion /complacency when weather warnings are issued in either or both jurisdictions.</p> <p>Action:</p> <p><i>The CBEMG should consider what this optimum methodology is and how this can be progressed. It is anticipated that the planned transition to an impacts-based forecasting system on the part of Met Eireann (Met Eireann 2017) will lead to greater alignment with UK and Northern Ireland systems in the coming years. As such, the above is to be considered an interim measure.</i></p>	Central Government, LAs, CBEMG
12.	<p>In the case of prolonged incidents (e.g. a pandemic or flood incidents) procedures should be introduced to ensure public safety messaging in each jurisdiction is kept as consistent as possible.</p> <p>Action:</p> <p>Develop formal coordination mechanisms and procedures at both operational and strategic levels on an inter-jurisdictional basis. This will help to increase levels of trust and compliance with official guidance.</p>	LAs, emergency services, CBEMG, Central Government
13.	<p>Public safety messaging in the preparation phase should address the full spectrum of emergency situations, from high-probability low-impact events (e.g. fallen tree on a road, localised gas leak) to low-probability high-impact events (e.g. regional black-out, chemical leak or major traffic accidents) and provide targeted guidance on what to do in each situation.</p>	Central Government, LAs, emergency services
14.	<p>For the message that cross-border emergency management is coherent, well-coordinated and efficient, to reach cross-border communities, inter-jurisdictional cooperation needs to become more visible, and be seen to work.</p> <p>Action:</p> <p><i>Develop and implement strategic and multi-agency cross-border scenario-based exercises on a continual sustained basis. These can be an effective means of both preparing for potential cross-border incidents and demonstrating to the public that the capacity for an effective cross-border response is there and can be called upon.</i></p>	LAs, emergency services, CBEMG, Central Government Departments as relevant, North and South

APPENDIX A: THE ICLRD RESEARCH TEAM

Dr. Cormac Walsh

Cormac is a senior research associate with the International Centre for Local and Regional Development (ICLRD) and principal investigator on this project. He is an independent researcher and consultant, based in Hamburg, Germany (<https://cormacwalsh-consult.eu/>) and is also employed as a researcher at the University of Oldenburg Germany, working on environmental governance topics. He received his PhD from the School of Geography, Planning and Environmental Policy, University College Dublin in 2010 and has since then gained expertise on a range of issues in both an academic and applied research capacity, including environmental risk management, climate adaptation, marine spatial planning, coastal management and transboundary cooperation.

Ms. Caroline Creamer

Caroline is Director of the International Centre for Local and Regional Development (ICLRD) and a Research Fellow with the Maynooth University Social Sciences Institute (MUSSI) and the Innovation Value Institute (IVI) at Maynooth University. She is Facilitator of the All-Ireland Smart Cities Forum and ESPON Contact Point for Ireland. She has worked in a research and management capacity on a number of funded projects and action research programmes - at various scales - for over 20 years. She has been actively involved in the co-design and delivery of capacity building training with councils, and in the creation of learning networks for different sectoral interests. A qualified town planner, Caroline's research interests include spatial planning practice and policy, leadership in placemaking and place shaping, regional and local development and regeneration, collaborative and participative decision-making and inter-territorial and cross-border development.

Dr. Tadhg MacIntyre

Tadhg is an environmental psychologist leading Ireland's first postgraduate programme in Environmental Psychology at Maynooth University where he is affiliated with the Innovation Value Institute. In 2019, he co-edited *Physical Activity in Natural Settings* (Routledge) and more recently was co-editor of the Routledge Handbook on Mental Health in Elite Sport. He is a visiting Professor at the Inland University of Applied Sciences in Norway. Currently, he coordinates GoGreenRoutes a €10.5m four-year Horizon project on urban health which targets six European cities and has global outreach with its 40 partners (2020-2024) and

GoGreen Next (2024-2028), a Horizon Europe project on climate change impacts on urban health.

Dr. Brendan Keegan

Brendan is a Lecturer in Marketing at Maynooth University, specialising in digital placemaking, digital analytics, and artificial intelligence applications in marketing. His research has been published in *Industrial Marketing Management*, *Information Systems Frontiers* and the *European Journal of Marketing*. Brendan is the Principal Investigator for digital placemaking initiatives within the GoGreenRoutes Project.

Dr. Adrienne McCann

Adrienne is the local coordinator for Louth on the Healthy Age Friendly Homes Programme, which delivers support coordination for adults over the age of 65. Prior to taking up this role in January 2024, Adrienne was the Research Manager with the Maynooth University-Age Friendly Ireland Strategic Partnership. Adrienne is an Occupational Therapist by background having worked in the areas of rheumatology and elderly care acute settings in Northern Ireland. She received her PhD in 2019 and previously worked on the transnational JPND and Alzheimer's Society UK-funded studies on delivering a family carer decision support intervention in long-term care settings across six countries. Adrienne has also worked on cross-border studies evaluating health indices on the island of Ireland as part of the CHITIN network. Her research interests include older adults, ageing, palliative care and cross-border health research.

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